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ABSTRACT

Information is presented about the administrative computing activities of colleges and universities belonging to CAUSE (the professional association for computing and information technology in higher education). Profiles and trends are provided based on 1985 Member Institution Profile Surveys conducted in 1980, 1983, and 1985. A total of 350 institutions responded in 1980, 318 in 1983, and 400 in 1985. Most of the data are summarized according to the responding institutions' political control (public or private), type (university, four-year or two-year), and size. Profiles cover computing organizations, staffing, budgeting, computer hardware and communications, and software used by the responding institutions. Trends include the following: administrative computing is reporting to a higher level in academic institutions; although most academic and administrative computing organizations are combined, there is some movement toward separation of these functions; and analyst/programming staffs are growing, while operations and systems programming staffs are declining. Appended are a list of participating institutions and a 1985 survey form. (SW)

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MONOGRAPH SERIES

Administrative Information Systems: The 1985 Profile and Five-Year Trends

HE020402

By
Charles R. Thomas
and
Dana S. van Hoesen

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The Professional Association for Computing and Information Technology in Higher Education

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About CAUSE

CAUSE, The Professional Association for Computing and Information Technology in Higher Education, is a non-profit higher education professional association, national in structure, membership, and operation. The mission of the association is to support those professionals who plan for and manage the information resource in colleges and universities, and to promote effective planning, management, and evaluation of the technologies that support information resource management. CAUSE activities provide a vehicle for communication among higher education professionals with common interests and concerns, a centralized source of accessible information to support the research and decision making of such professionals, a catalyst for the identification, discussion, and solution of problems and issues related to the field, a resource for research and publication, and an opportunity for individual professional development.

CAUSE member services include: the Administrative Systems Query (ASQ), which provides information from a data base of member institution profiles; the Exchange Library, which is a clearinghouse for information and systems available from or contributed by members; an Information Request Service to locate specific systems or information; consulting services to review computing organization and management plans; a bi-monthly magazine, *CAUSE/EFFECT*; a bi-monthly newsletter, *CAUSE Information*; the annual CAUSE National Conference; special seminars and workshops; and a monograph series in which this is the seventh publication.

The CAUSE Monograph Series offers members a vehicle for sharing research findings, study results, and detailed information on topics relevant to computing and information technology in higher education. Each CAUSE Voting Representative is entitled to a free copy of the monographs published in the series as a membership benefit. Suggestions or contributions of material for future monographs are welcome, and should be directed to the CAUSE Office for review by the Publications Committee of the CAUSE Board of Directors.

About the Authors

Charles R. Thomas, currently a vice president of Information Associates, was the Executive Director of CAUSE from its incorporation in 1971 until his resignation early in 1986. Entering the field of computing in 1958 by learning to program ILLIAC-I, Chuck was assistant director of administrative data processing at the University of Illinois until 1969, when he became one of the original staff members of the National Center for Higher Education Management Systems in Boulder, Colorado. He is the author of many articles and a frequent speaker on higher education administrative information systems. One of his publications is *Administrative Information Systems: The 1980 Profile*, the first summary of data collected through the CAUSE Member Institution Profile survey. Chuck is a graduate of the University of Illinois.

Dana van Hoesen, Director of Member and Information Services at CAUSE, is responsible for administrative systems in the association's National Office, member promotions and records, and the CAUSE member information exchange program, including the Exchange Library and the Administrative Systems Query (ASQ) service. Before joining CAUSE, Dana was employed for four years by Neodata Services, a magazine circulation fulfillment firm located in Boulder, Colorado. He has supervised work on a variety of information system development and implementation projects in both on-line and batch processing environments, and has developed system proposals, user and system documentation, technical publications, and business system analyses. He is a 1976 graduate of the University of Colorado.

Acknowledgment

CAUSE and the authors of this monograph wish to thank the IBM Corporation for their continued generous support in providing the funding which made possible the publication of this monograph.

Foreword

CAUSE is pleased to offer this latest addition to our series of monographs addressing issues pertaining to computing and information technologies in higher education. *Administrative Information Systems: The 1985 Profile and Five-Year Trends* is a continuation of the series of monographs profiling CAUSE member institutions which began with the publication of a similar profile for 1980.

At the time the 1980 profile was published, we hoped that the collection and publication of data in future years would make possible the early detection of trends in computing and information technologies in higher education. This hope has been realized through the collection of data in CAUSE-initiated Member Institution Profile surveys in 1980, 1983, and 1985, and the publication of this monograph delineating the 1985 profile and administrative information systems trends.

Trends

A review of the data from 1980, 1983, and 1985 reveals some shifts, which are highlighted in this monograph as trends. They represent more a confirmation of our general perception of the direction in which higher education information systems are headed than dramatic revelations:

Administrative computing is reporting to a higher level in academic institutions.

Although most academic and administrative computing organizations are combined, there is some movement toward separation of these functions.

Analyst/programming staffs are growing, while operations and systems programming staffs are declining.

Administrative information systems budgets are growing, but are growing less than total operating budgets for the institutions, and they are decreasing as a percentage of total operating budgets.

Institutions are gradually moving away from direct chargeback for computing costs.

A few key hardware vendors account for the majority of computing installations. IBM is still in front in terms of numbers of comput -

ers reported, and second-ranked Digital Equipment is significantly narrowing the gap.

More administrative applications are in place, and many more of these rely on on-line processing.

Proprietary software packages are increasingly reported in use for all application areas, but they are still outnumbered by systems developed in-house.

Microcomputers, while beginning to appear in large numbers in administrative offices, are used relatively little for administrative applications.

Distributed processing is not yet widely implemented for administrative applications.

Most professionals in fields related to computing and information services in higher education are at least subconciously aware of such shifts. Seeing the documentation that this monograph provides may help them evaluate the directions in which their own institutions are moving, from an objective perspective. This monograph offers the kind of information that professionals need to have as a context for their decision making.

Two other CAUSE monographs have been published in 1986, both focusing on specific environments: *Computing Strategies in Small Universities and Colleges*, by Patrick J. Coughlin of SUNY/Purchase, and *Computers Serving Students: The Community College Way*, edited by Judith W. Leslie of the Maricopa Community Colleges. Readers of those monographs will be interested in the data presented here for small institutions and for two-year institutions.

Custom Reporting—ASQ

While the picture of administrative information systems painted in this profile is enlightening, and it is historically of interest to confirm the trends emerging since the 1980 profile, the real value of the data on which this monograph is based is the wealth of information it provides for custom reporting, available as a benefit of CAUSE membership. In 1984, CAUSE initiated an Administrative Systems Query (ASQ) service, enabling members to request reports derived from the Member Institution Profile. Comparisons or averages may be reported for any institutional category. For example, a large public university might want to compare their staff size and AIS budget against the averages for other institutions of the same size and type. Despite the differences in institutional practice that limit the absolute comparability of the data, these comparisons are

still useful, and the increased use of such comparisons will help uncover and document the differences.

ASQ reports are usually generated within twenty-four hours of the member's inquiry, and are available to any office or department of a member campus. Unlimited use of the ASQ service is available to CAUSE member campuses at no charge.

A particularly valuable use of ASQ is for identifying campuses with specific computer applications in operation, along with the names and phone numbers of CAUSE member representatives on those campuses. For example, a small private college embarking on the development or purchase of a fund accounting system for their IBM PC/MS-DOS environment can identify other institutions of similar size, type, and environment which have already implemented such systems. Direct contact with CAUSE member representatives at the campuses identified can save considerable time and effort for the researcher.

Jane N. Ryland
Executive Director
CAUSE

Table of Contents

Chapter One	EXECUTIVE SUMMARY	1
Chapter Two	ORGANIZATION	7
Chapter Three	STAFFING	37
Chapter Four	BUDGETS	65
Chapter Five	HARDWARE AND COMMUNICATIONS	117
Chapter Six	COMPUTER SOFTWARE	145
Appendix	RESPONDING INSTITUTIONS (1985)	177
	SAMPLE 1985 SURVEY	

CHAPTER ONE

EXECUTIVE SUMMARY

In 1980, 1983, and 1985, CAUSE asked member campuses to provide information about their administrative computing activities in the Member Institution Profile (MIP) Survey. A MIP survey was also conducted in 1986, but results were not available at the time of publication of this monograph. The institutions that responded to the three surveysare from all areas of the United States and are of all sizes and types– a total of 350 institutions in the 1980 survey, 318 in 1983, and 400 in 1985. A sample of the 1985 survey form and a list of respondents to that survey are included as appendices to this monograph.

The 1980 survey provided the basis for the CAUSE monograph *Administrative Information Systems: The 1980 Profile*; the results of the second and third surveys were used to expand and update the CAUSE Member Institution Profile data base in the CAUSE Office. In addition to providing the statistical background for this new monograph, the CAUSE MIP data base provides a wealth of reference information for CAUSE members, available through the CAUSE Administrative Systems Query (ASQ) service. A telephone call or letter to the National Office can put a CAUSE member in touch with valuable information about the hardware and software environments, administrative staffing and budget figures, or computer applications on similar campuses.

Responding Institutions

The profiles and trends described in this monograph are based on detailed information from the three CAUSE Member Information Profile Surveys conducted in 1980, 1983 and 1985. The tables include data from the 1985 survey, while bar charts summarize the relative responses to all three surveys.

To provide common reference groups, most of the data in this monograph are summarized according to the responding institutions' political control (public or private), type (university, four-year, or two-year), and size. The four size categories are based on institutional student enrollment: small (under 2,000), medium (2,000 to 7,999), medium-large (8,000 to 17,999), or large (18,000 and over). Where appropriate, selected tables also display data for combined versus separate academic and administrative computing installations. Throughout the monograph relevant summaries are displayed in pie and bar chart form.

The distribution of the institutions responding to the 1985 survey is described in Table 1.0 below. Note that 35.8 percent of those respondents are privately controlled and 64.2 percent are public institutions. Size distribution shows approximately 22.8 percent small institutions, 40.8 percent medium-sized, 22.8 percent medium-large, and 13.8 percent large. Categorized by type, 17.8 percent of the respondents are two-year institutions, 43 percent are four-year, and 39.3 percent are universities.

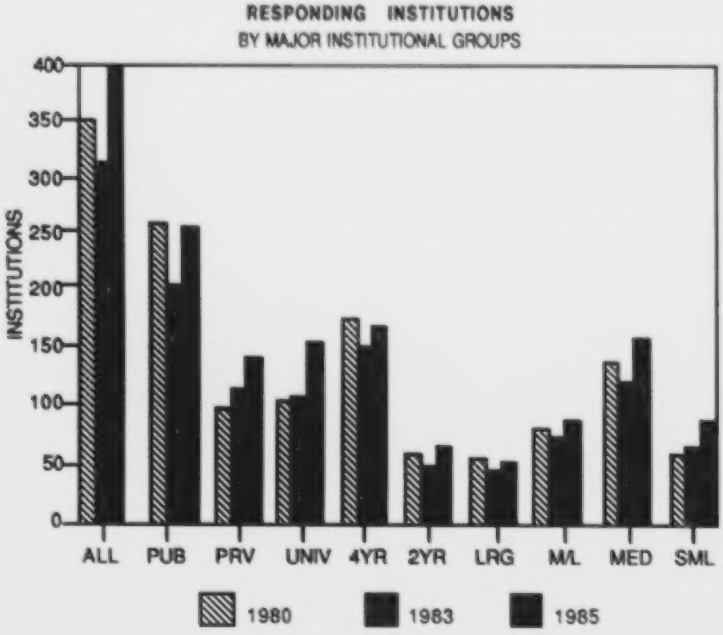
1985 TABLE 1.0

DISTRIBUTION OF RESPONDING INSTITUTIONS

	PUBLIC INSTITUTIONS				PRIVATE INSTITUTIONS				ALL INSTITUTIONS			
	UNIV	4-YR	2-YR	ALL	UNIV	4-YR	2-YR	ALL	UNIV	4-YR	2-YR	ALL
SMALL	4	11	15	30	8	53	0	61	12	64	15	91
TYPE %	13%	37%	50%	100%	13%	87%	0%	100%	13%	70%	16%	100%
SIZE %	4%	13%	21%	12%	14%	62%	0%	43%	8%	37%	21%	23%
MEDIUM	15	50	38	103	31	29	0	60	46	79	38	163
TYPE %	15%	49%	37%	100%	52%	48%	0%	100%	28%	48%	23%	100%
SIZE %	15%	57%	54%	40%	53%	34%	0%	42%	29%	46%	54%	41%
M-LARGE	40	23	9	72	16	3	0	19	56	26	9	91
TYPE %	56%	32%	13%	100%	84%	16%	0%	100%	62%	29%	10%	100%
SIZE %	40%	26%	13%	28%	28%	4%	0%	13%	36%	15%	13%	23%
LARGE	40	3	9	52	3	0	0	3	43	3	9	55
TYPE %	77%	6%	17%	100%	100%	0%	0%	100%	78%	5%	16%	100%
SIZE %	40%	3%	13%	20%	5%	0%	0%	2%	27%	2%	13%	14%
TOTAL	99	87	71	257	58	85	0	143	157	172	71	400
TYPE %	39%	34%	28%	100%	41%	59%	0%	100%	39%	43%	18%	100%
SIZE %	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%	100%

Figure 1 shows the distribution of responding institutions for all three years by major institutional category in bar graph form.

Figure 1



Chapters Two through Six profile computing organizations, staffing, budgeting, computer hardware and communications, and software used by the responding institutions, noting apparent trends and including comments regarding the detailed findings of the survey. Summaries of each of those chapters follow.

Organization

From 1980 to 1985 there has been a shift toward separate computing installations for academic and administrative computing on college and university campuses, although the majority of institutions still combine these functions. At the same time the computing function is being decentralized, the increase in the number of CIO-level positions and the higher level of reporting indicate an organizational trend towards the

centralization of the management of computing and other technology-based activities at the campus level.

In 1980 74 percent of the administrative computing installations reported to the vice presidential level or above. By 1985 that percentage had increased to 80 percent. Most of this increase was accounted for by administrative installations reporting to the administrative vice president and to the new position of computing vice president. The 1985 Profile indicated ten vice presidents for computing—none were reported in 1980—providing a central focus for technology on the campuses.

Academic computing also reports to the vice presidential level or higher in over 80 percent of the responding institutions, and to the academic vice president in a majority of the institutions. Since questions pertaining to academic computing were included in the survey for the first time in 1985, no trends can be discerned.

Staffing

The distribution of AIS staff by function between 1980 and 1985 shows an increase in the proportion of analysts and programmers and a corresponding decrease in the proportion of operations staff, with only slight changes in the other three staff categories. These shifts in staff are more pronounced in small and private institutions than in large and public institutions.

The average staff size decreased significantly between 1980 and 1985 for large institutions and decreased slightly for medium and small institutions. While the medium-large institutions showed a slight increase, most of this increase was in the analyst/programmer staff category. Systems programming staff increased at large institutions on the average, and decreased for institutions in all other size categories.

Budgets

The annual budgets for administrative information systems (AIS) are difficult to compare for reasons outlined in Chapter Four; however, comparisons of average AIS budgets are useful when the data for a substantial number of similar institutions are aggregated. The data from the CAUSE Member Institution Profiles show that between 1980 and 1985 average annual budgets for administrative information systems increased slightly more in public institutions than in private institutions. In general, AIS budgets for medium-large and medium-sized institutions increased at a greater compound rate than did AIS budgets for the large and small institutions.

The AIS annual budget reported by each responding institution was divided by that institution's annual operating budget to determine a percentage for comparison. On this basis, the percentage of institutions reporting budgets for administrative information systems that range from 1 to 3.9 percent of total operating budgets was essentially the same in 1985 as it was in 1980, but there was a significant increase in the percentage of the institutions reporting AIS budgets less than 1 percent of total budgets, and a corresponding decrease in the percentage reporting AIS budgets of 4

percent or more of total budgets. Also, it was noted that institutional annual operating budgets increased at a greater rate than budgets for administrative information systems between 1980 and 1985.

An examination of the distribution of AIS budgets by category of expenditure shows that the proportion spent for computing hardware continues to decrease, as the proportion spent for staff, software, and communications grows.

The data on AIS cost recovery indicate that most institutions are moving away from the economic model of charging for computing services and implementing other methods of funding this activity; cost recovery for academic computing follows the same pattern.

Computer Hardware and Communications

A simple count of computers listed by manufacturer indicates that the eight companies which accounted for 83 percent of the entries in 1980 accounted for 97 percent of the 1985 entries. These data show a definite "mainstream" trend in institutional choice of computer manufacturer. IBM still accounts for most of the entries (37 percent), while a significant increase was recorded by computers from Digital Equipment Corporation (which was named in less than 20 percent of the entries in 1980 and had increased to 27 percent in 1985). None of the other six companies accounted for more than 7 percent of the listed computers. Chapter Five contains bar charts that show the distribution of computers reported, both by the major institutional groups and by the eight predominant companies.

Chapter Five also describes a theoretical three-tiered structure of campus academic and administrative computer use, from mainframe to minicomputer to microcomputer, and suggests that the key to the successful integration of these three tiers of computing is the campus network.

Computer Software

The use of proprietary software continues to increase in colleges and universities, and the 1985 CAUSE Member Institution Profile measured that use in three ways. The listing of specific proprietary software package names indicates that 37 percent of the proprietary-package entries listed are application-specific, 17 percent are data base management systems, and 46 percent are other general support packages. Detailed lists of the most reported packages in each category appear in this chapter.

All areas of administrative application software showed increases in the average number of applications reported, and there was a significant shift from batch processing to on-line processing between 1980 and 1985. The overall average number of applications per institution increased from 51 in 1980 to 62 in 1985, and the average percentage of on-line applications more than doubled from 30 percent in 1980 to 64 percent in 1985. Several application areas show a growing use of microcomputers and distributed data processing, as well as proprietary software packages.

Tables in Chapter Six provide multiple levels of summary information about each of the individual administrative computing applications and eleven application groupings. CAUSE members may request more detailed information from the CAUSE National Office through the Administrative Systems Query Service.

CHAPTER TWO

ORGANIZATION

The organization and reporting structures for both administrative and academic computing vary widely from institution to institution; however, some reasonably consistent patterns within major institutional categories emerge when the data for several hundred institutions are aggregated. This chapter discusses the organization of campus computing and the reporting structures for administrative computing, with comments on trends from 1980 to 1985. Descriptive information on the reporting structures for academic computing is presented for the 1985 Profile only, since that information was collected then for the first time.

Separate versus Combined Academic/Administrative Computing

Since the early 1960s, when computers began to take a role in administrative data processing tasks, the question of combined versus separate administrative and academic computing installations in colleges and universities has been the subject of much study and debate. In any given year a number of institutions reorganize their management of computing: some with separate installations combine them, and some with combined installations separate. Since there are good examples of both separate and combined computing organizations, it cannot be said that one organizational structure is "better" than the other; however, the information in this chapter should help colleges and universities review their own organizations from a statistical standpoint, in relation to institutions of comparable size, control, and type.

Figure 2 shows the percent of responding institutions reporting separate administrative and academic computing installations in all three surveys, and Figure 3 shows the percent of institutions reporting combined installations in the three surveys. Detailed information on the organization of computing reported in the 1985 survey appears in Tables 2.0 to 2.2 at the end of this chapter.

Figure 2

ORGANIZATION OF COMPUTING—SEPARATE

BY MAJOR INSTITUTIONAL GROUPS

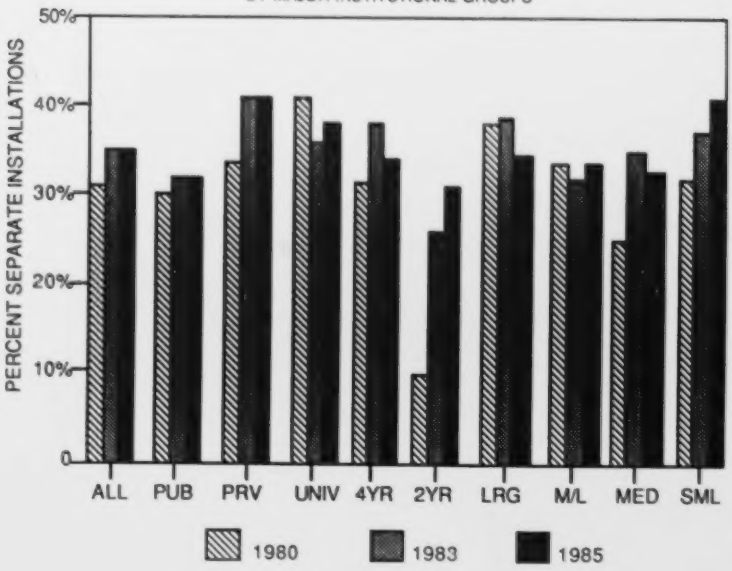
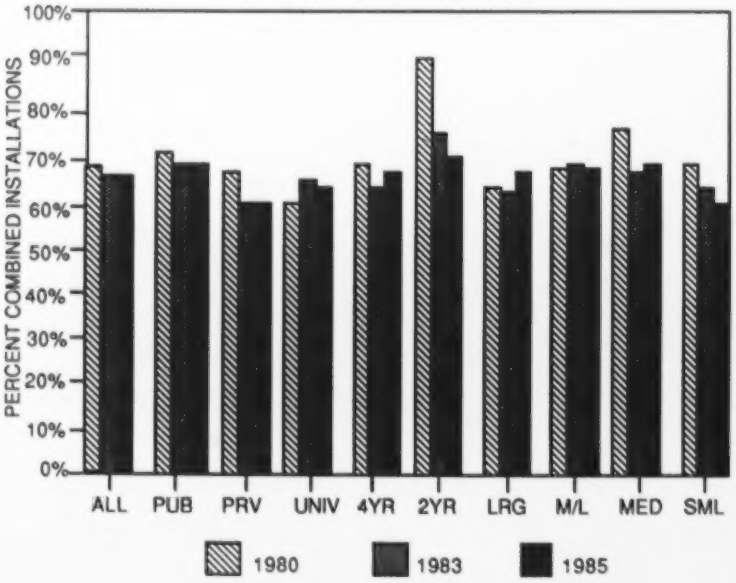


Figure 3

ORGANIZATION OF COMPUTING—COMBINED
BY MAJOR INSTITUTIONAL GROUPS



According to the CAUSE Member Institution Profile surveys, from 1980 to 1985 there was a 4 percent decrease in the number of institutions reporting combined installations and a corresponding increase in the number reporting separate installations. In 1980 69 percent of the responding institutions reported combined academic and administrative computing installations, and 31 percent reported separate installations. The 1985 data show 65 percent combined versus 35 percent separate.

This shift may be the result of several factors, including the growing capabilities of minicomputers, the increased sophistication of computer operating systems that make it possible for a computing installation to operate with a minimum number of highly skilled systems programmers, the development of computer networking, and the increased computer literacy of the personnel in user departments.

The increase in the number of separate installations was reasonably consistent for most of the major institutional groups, regardless of type or control, with the percentage increases ranging from 2 percent to 9 percent. With respect to size, two-year colleges were outside the general range with a change of 21 percent: in 1980 only 10 percent of the two-year institutions reported separate installations, but by 1985 that

percentage changed to 31 percent, bringing the two-year colleges into the mainstream with the other major institutional groups. This may be due to the expansion of the computing function in general at two-year institutions.

While the survey did not request information on any reasons for organizational changes, it is the opinion of the authors that this trend is primarily the result of the increasing power and decreasing cost of computing hardware, and the resulting distribution of computing on campuses.

There were two exceptions to the general trend toward more separate administrative installations. Large universities reported a shift toward more combined installations, and there was no change in the percentage of combined versus separate installations in medium-large institutions. Using the traditional definitions, some large universities may have reported their computing organization as combined when only the top level of management is "combined," even though the academic and administrative computing installations may be separate.

Level of Reporting

The 1980 and 1983 profile surveys requested reporting information only for administrative computing, while the 1985 survey requested that information for both administrative and academic computing. Trends on reporting, therefore, are provided in this monograph only for administrative computing. A profile is provided of academic computing in 1985.

Administrative Computing

There is a general trend for administrative computing to report to a higher level within institutional organizations. Between 1980 and 1985 there was a six percent shift for all institutions (from 74 percent to 80 percent) in the number of institutions in which administrative computing reports to the vice presidential level or above. This change was evident in all major institutional categories of type and control, and in most size categories. In large institutions the percentage reporting to the vice presidential level or above remained at 73 percent, and in small institutions that percentage for 1980 was already above the 80 percent level. As in 1980, administrative computing reports to the president most often in the two-year institutions (15 percent) and least often in universities (6 percent).

An interesting change in 1985 occurred among the separate administrative installations. In 1980, 70 percent reported to the vice presidential level or above. By 1985, that percentage increased to 84 percent, representing the largest change for any major institutional category. In general, the level of responsibility for managing the administrative computing environment has shifted to significantly higher levels on college and university campuses.

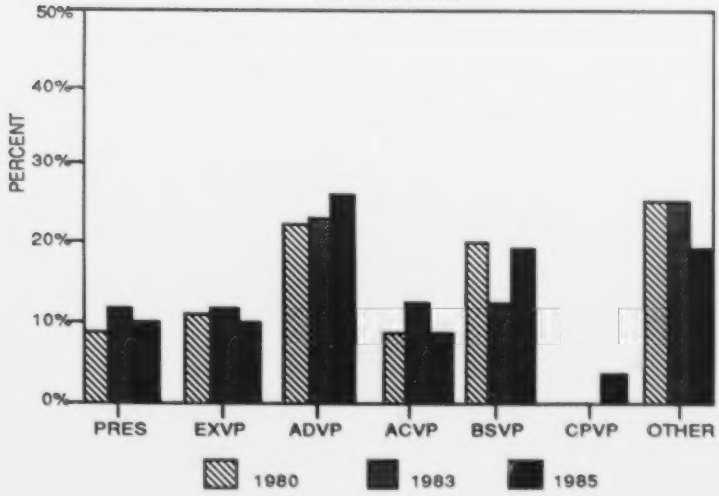
The percentage of institutions with administrative computing reporting to the president, the executive vice president, the academic vice president, or the business vice president changed only slightly between 1980 and 1985. The only significant change was in the increased

percentage of institutions with administrative computing reporting to the administrative vice president or to the new category of computing vice president. The increases in these two categories offset the decrease in the number of installations reporting to the "other" management titles.

Figure 4, below, shows a summary of administrative computing reporting by executive title for all institutions, while detailed information for 1985 appears in Tables 3.0 to 3.8 at the end of this chapter. There were only slight differences in this chart for each of the major insitutional groups.

Figure 4

AIS REPORTING (BY EXEC TITLE)
ALL INSTITUTIONS



In small institutions there was a decrease in the percentage of administrative computing installations reporting to academic vice presidents and a corresponding increase in the percentage reporting to business vice presidents between 1980 and 1985.

The 1985 CAUSE Profile survey included the reporting position of computing vice president for the first time, and for most of the institutions checking this category the position is relatively new. The Profile responses indicate ten vice presidents for computing in 1985, and preliminary results of the 1986 survey indicate that other similar positions have been created since then. Titles vary widely, but two of the more common are "vice president for computing and information technology" and "vice president for information resources." Many institutions now have either a position or an office to coordinate

computing, telecommunications, and other technology-based activities. Many major U.S. corporations already have "chief information officers," and the 1985 CAUSE Profile responses show that similar positions are appearing in higher education, beginning with the larger universities.

Whether or not they hold the title of vice president, chief information officers are a central focus for technology on the campus. Responsibilities typically include academic and administrative computing and, at many institutions, telecommunications. Printing, reprographics, and electronic mail are often included since those operations are increasingly technology-based activities. In some cases even the campus mail system is placed under the chief information officer because of the relationship between the concerns of that position and the use of electronic mail as a campus communication medium.

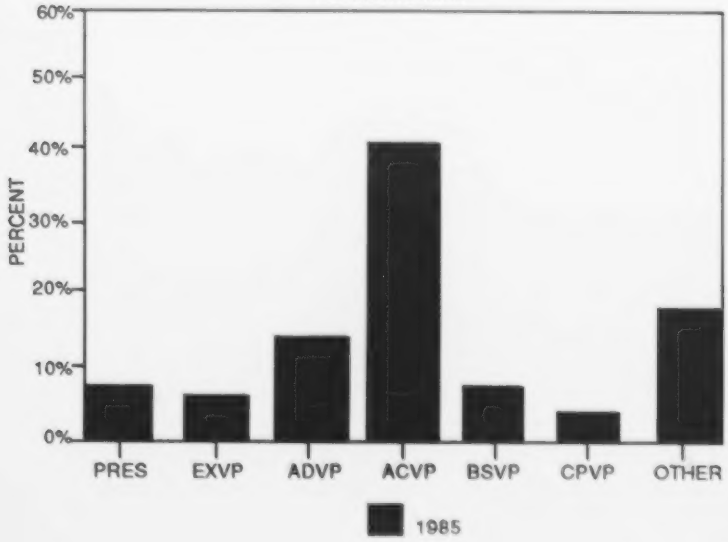
Academic Computing Reporting

Like administrative computing, academic computing reports to the vice presidential level or above in over 80 percent of the responding institutions, and in the majority of the institutions it reports to the academic vice president. Academic computing reports to the academic vice president in about 60 percent of the small private institutions as well as in institutions with separate academic and administrative computing installations. In the large public universities, however, academic computing is more likely to report to an administrative vice president or to another officer below the level of vice president.

The individual charts for academic computing reporting in the major institutional groups all have the same profile, so only the chart for all institutions is displayed here. The Table 4 series at the end of this chapter provides the full detail according to institutional control, type, and size.

Figure 5

ACADEMIC COMPUTING REPORTING (BY EXEC TITLE)
ALL INSTITUTIONS



Academic and Administrative Computing Reporting

Figure 6 combines data from Figures 4 and 5 to show reporting by executive title for both academic and administrative computing for 1985. This chart shows that more than 40 percent of the academic computing installations and less than 10 percent of the administrative computing installations report to the academic vice president.

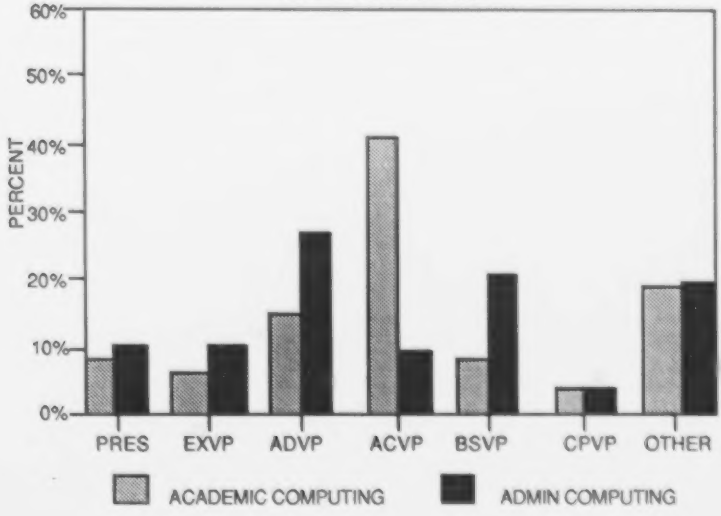
In all institutional groups, approximately 50 percent of the institutions indicate that administrative computing reports to either the administrative or the business vice president, and more often to the administrative vice president than to the business vice president in all institutional categories except the small and the private institutions (where the business vice president usually serves as the administrative vice president). Also, administrative computing more often reports to the president than does academic computing, particularly in the four-year and two-year institutions.

Since the profile for each of the major institutional groups in Figure 6 is essentially the same, only the chart for all institutions is included here. Detailed data by institutional control, type, and size is displayed in the Tables 3 and 4 series which follow.

Figure 6

ACADEMIC & ADMINISTRATIVE COMPUTING REPORTING

ALL INSTITUTIONS—1985



1985 TABLE 2.0
ORGANIZATION OF COMPUTING
All Responding Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
SEPARATE INSTALLATIONS	7	58%	27	42%	3	20%	37	41%
COMBINED INSTALLATIONS	5	42%	37	58%	12	80%	54	59%
TOTAL REPORTED	12	13%	64	70%	15	16%	91	23%
MEDIUM INSTITUTIONS								
SEPARATE INSTALLATIONS	18	39%	22	28%	13	34%	53	33%
COMBINED INSTALLATIONS	28	61%	57	72%	25	66%	110	67%
TOTAL REPORTED	46	28%	79	48%	38	23%	163	41%
MED-LARGE INSTITUTIONS								
SEPARATE INSTALLATIONS	19	34%	9	35%	3	33%	31	34%
COMBINED INSTALLATIONS	37	66%	17	65%	6	67%	60	66%
TOTAL REPORTED	56	62%	26	29%	9	10%	91	23%
LARGE INSTITUTIONS								
SEPARATE INSTALLATIONS	16	37%	0	0%	3	33%	19	35%
COMBINED INSTALLATIONS	27	63%	3	100%	6	67%	36	65%
TOTAL REPORTED	43	78%	3	5%	9	16%	55	14%
ALL SIZES								
SEPARATE INSTALLATIONS	60	38%	58	34%	22	31%	140	35%
COMBINED INSTALLATIONS	97	62%	114	66%	49	69%	260	65%
TOTAL REPORTED	157	39%	172	43%	71	18%	400	100%

1985 TABLE 2.1
ORGANIZATION OF COMPUTING
Public Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
SEPARATE INSTALLATIONS	2	50%	4	36%	3	20%	9	30%
COMBINED INSTALLATIONS	2	50%	7	64%	12	80%	21	70%
TOTAL REPORTED	4	13%	11	37%	15	50%	30	12%
MEDIUM INSTITUTIONS								
SEPARATE INSTALLATIONS	3	20%	12	24%	13	34%	28	27%
COMBINED INSTALLATIONS	12	80%	38	76%	25	66%	75	73%
TOTAL REPORTED	15	15%	50	49%	38	37%	103	40%
MED-LARGE INSTITUTIONS								
SEPARATE INSTALLATIONS	16	40%	7	30%	3	33%	26	36%
COMBINED INSTALLATIONS	24	60%	16	70%	6	67%	46	64%
TOTAL REPORTED	40	56%	23	32%	9	13%	72	28%
LARGE INSTITUTIONS								
SEPARATE INSTALLATIONS	15	38%	0	0%	3	33%	18	35%
COMBINED INSTALLATIONS	25	63%	3	100%	6	67%	34	65%
TOTAL REPORTED	40	77%	3	6%	9	17%	52	20%
ALL SIZES								
SEPARATE INSTALLATIONS	36	36%	23	26%	22	31%	81	32%
COMBINED INSTALLATIONS	63	64%	64	74%	49	69%	176	68%
TOTAL REPORTED	99	39%	87	34%	71	28%	257	100%

1985 TABLE 2.2
ORGANIZATION OF COMPUTING
Private Institutions

	UNIVERSITIES NO.	UNIVERSITIES PCT	FOUR-YEAR NO.	FOUR-YEAR PCT	TWO-YEAR NO.	TWO-YEAR PCT	ALL TYPES NO.	ALL TYPES PCT
SMALL INSTITUTIONS								
SEPARATE INSTALLATIONS	5	63%	23	43%	0	0%	28	46%
COMBINED INSTALLATIONS	3	38%	30	57%	0	0%	33	54%
TOTAL REPORTED	8	13%	53	87%	0	0%	61	43%
MEDIUM INSTITUTIONS								
SEPARATE INSTALLATIONS	15	48%	10	34%	0	0%	25	42%
COMBINED INSTALLATIONS	16	52%	19	66%	0	0%	35	58%
TOTAL REPORTED	31	52%	29	48%	0	0%	60	42%
MED-LARGE INSTITUTIONS								
SEPARATE INSTALLATIONS	3	19%	2	67%	0	0%	5	26%
COMBINED INSTALLATIONS	13	81%	1	33%	0	0%	14	74%
TOTAL REPORTED	16	84%	3	16%	0	0%	19	13%
LARGE INSTITUTIONS								
SEPARATE INSTALLATIONS	1	33%	0	0%	0	0%	1	33%
COMBINED INSTALLATIONS	2	67%	0	0%	0	0%	2	67%
TOTAL REPORTED	3	100%	0	0%	0	0%	3	2%
ALL SIZES								
SEPARATE INSTALLATIONS	24	41%	35	41%	0	0%	59	41%
COMBINED INSTALLATIONS	34	59%	50	59%	0	0%	84	59%
TOTAL REPORTED	58	41%	85	59%	0	0%	143	100%

1985 TABLE 3.0
ADMINISTRATIVE INFORMATION SYSTEMS REPORTING
All Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
PRESIDENT	0	0%	5	8%	4	27%	9	10%
EXECUTIVE VICE PRES	2	17%	5	8%	0	0%	7	8%
ADMIN VICE PRES	4	33%	10	17%	3	20%	17	20%
ACADEMIC VICE PRES	0	0%	7	12%	1	7%	8	9%
BUSINESS VICE PRES	2	17%	23	38%	5	33%	30	34%
COMPUTING VICE PRES	0	0%	0	0%	0	0%	0	0%
OTHER OFFICER	4	33%	10	17%	2	13%	16	18%
TOTAL REPORTED	12	100%	60	100%	15	100%	87	100%
MEDIUM INSTITUTIONS								
PRESIDENT	4	9%	12	16%	5	13%	21	13%
EXECUTIVE VICE PRES	5	11%	7	9%	3	8%	15	9%
ADMIN VICE PRES	13	29%	21	27%	14	37%	48	30%
ACADEMIC VICE PRES	6	13%	12	16%	1	3%	19	12%
BUSINESS VICE PRES	9	20%	8	10%	9	24%	26	16%
COMPUTING VICE PRES	2	4%	1	1%	1	3%	4	3%
OTHER OFFICER	6	13%	16	21%	5	13%	27	17%
TOTAL REPORTED	45	100%	77	100%	38	100%	160	100%
MED-LARGE INSTITUTIONS								
PRESIDENT	2	4%	2	8%	2	22%	6	7%
EXECUTIVE VICE PRES	5	9%	2	8%	1	11%	8	9%
ADMIN VICE PRES	15	28%	8	31%	4	44%	27	30%
ACADEMIC VICE PRES	4	7%	4	15%	0	0%	8	9%
BUSINESS VICE PRES	10	19%	2	8%	2	22%	14	16%
COMPUTING VICE PRES	5	9%	1	4%	0	0%	6	7%
OTHER OFFICER	13	24%	7	27%	0	0%	20	22%
TOTAL REPORTED	54	100%	26	100%	9	100%	89	100%
LARGE INSTITUTIONS								
PRESIDENT	3	7%	1	50%	0	0%	4	8%
EXECUTIVE VICE PRES	4	10%	0	0%	3	33%	7	13%
ADMIN VICE PRES	11	27%	1	50%	2	22%	14	27%
ACADEMIC VICE PRES	0	0%	0	0%	1	11%	1	2%
BUSINESS VICE PRES	8	20%	0	0%	0	0%	8	15%
COMPUTING VICE PRES	4	10%	0	0%	0	0%	4	8%
OTHER OFFICER	11	27%	0	0%	3	33%	14	27%
TOTAL REPORTED	41	100%	2	100%	9	100%	52	100%
ALL SIZES								
PRESIDENT	9	6%	20	12%	11	15%	40	10%
EXECUTIVE VICE PRES	16	11%	14	8%	7	10%	37	10%
ADMIN VICE PRES	43	28%	40	24%	23	32%	106	27%
ACADEMIC VICE PRES	10	7%	23	14%	3	4%	36	9%
BUSINESS VICE PRES	29	19%	33	20%	16	23%	78	20%
COMPUTING VICE PRES	11	7%	2	1%	1	1%	14	4%
OTHER OFFICER	34	22%	33	20%	10	14%	77	20%
TOTAL REPORTED	152	100%	165	100%	71	100%	388	100%

1985 TABLE 3.1
ADMINISTRATIVE INFORMATION SYSTEMS REPORTING
Public Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
PRESIDENT	0	0%	3	27%	4	27%	7	23%
EXECUTIVE VICE PRES	0	0%	0	0%	0	0%	0	0%
ADMIN VICE PRES	3	75%	2	18%	3	20%	8	27%
ACADEMIC VICE PRES	0	0%	0	0%	1	7%	1	3%
BUSINESS VICE PRES	0	0%	2	18%	5	33%	7	23%
COMPUTING VICE PRES	0	0%	0	0%	0	0%	0	0%
OTHER OFFICER	1	25%	4	36%	2	13%	7	23%
TOTAL REPORTED	4	100%	11	100%	15	100%	30	100%
MEDIUM INSTITUTIONS								
PRESIDENT	0	0%	6	12%	5	13%	11	11%
EXECUTIVE VICE PRES	2	13%	5	10%	3	8%	10	10%
ADMIN VICE PRES	3	20%	14	29%	14	37%	31	30%
ACADEMIC VICE PRES	2	13%	8	16%	1	3%	11	11%
BUSINESS VICE PRES	5	33%	6	12%	9	24%	20	20%
COMPUTING VICE PRES	1	7%	0	0%	1	3%	2	2%
OTHER OFFICER	2	13%	10	20%	5	13%	17	17%
TOTAL REPORTED	15	100%	49	100%	38	100%	102	100%
MED-LARGE INSTITUTIONS								
PRESIDENT	1	3%	2	9%	2	22%	5	7%
EXECUTIVE VICE PRES	3	8%	2	9%	1	11%	6	9%
ADMIN VICE PRES	12	32%	7	30%	4	44%	23	33%
ACADEMIC VICE PRES	3	8%	4	17%	0	0%	7	10%
BUSINESS VICE PRES	5	13%	2	9%	2	22%	9	13%
COMPUTING VICE PRES	3	8%	0	0%	0	0%	3	4%
OTHER OFFICER	11	29%	6	26%	0	0%	17	24%
TOTAL REPORTED	38	100%	23	100%	9	100%	70	100%
LARGE INSTITUTIONS								
PRESIDENT	3	8%	1	50%	0	0%	4	8%
EXECUTIVE VICE PRES	3	8%	0	0%	3	33%	6	12%
ADMIN VICE PRES	9	24%	1	50%	2	22%	12	24%
ACADEMIC VICE PRES	0	0%	0	0%	1	11%	1	2%
BUSINESS VICE PRES	8	21%	0	0%	0	0%	8	16%
COMPUTING VICE PRES	4	11%	0	0%	0	0%	4	8%
OTHER OFFICER	11	29%	0	0%	3	33%	14	29%
TOTAL REPORTED	38	100%	2	100%	9	100%	49	100%
ALL SIZES								
PRESIDENT	4	4%	12	14%	11	15%	27	11%
EXECUTIVE VICE PRES	8	8%	7	8%	7	10%	22	9%
ADMIN VICE PRES	27	28%	24	28%	23	32%	74	29%
ACADEMIC VICE PRES	5	5%	12	14%	3	4%	20	8%
BUSINESS VICE PRES	18	19%	10	12%	16	23%	44	18%
COMPUTING VICE PRES	8	8%	0	0%	1	1%	9	4%
OTHER OFFICER	25	26%	20	24%	10	14%	55	22%
TOTAL REPORTED	95	100%	85	100%	71	100%	251	100%

1985 TABLE 3.2
ADMINISTRATIVE INFORMATION SYSTEMS REPORTING
Private Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
PRESIDENT	0	0%	2	4%	0	0%	2	4%
EXECUTIVE VICE PRES	2	25%	5	10%	0	0%	7	12%
ADMIN VICE PRES	1	13%	8	16%	0	0%	9	16%
ACADEMIC VICE PRES	0	0%	7	14%	0	0%	7	12%
BUSINESS VICE PRES	2	25%	21	43%	0	0%	23	40%
COMPUTING VICE PRES	0	0%	0	0%	0	0%	0	0%
OTHER OFFICER	3	38%	6	12%	0	0%	9	16%
TOTAL REPORTED	8	100%	49	100%	0	0%	57	100%
MEDIUM INSTITUTIONS								
PRESIDENT	4	13%	6	21%	0	0%	10	17%
EXECUTIVE VICE PRES	3	10%	2	7%	0	0%	5	9%
ADMIN VICE PRES	10	33%	7	25%	0	0%	17	29%
ACADEMIC VICE PRES	4	13%	4	14%	0	0%	8	14%
BUSINESS VICE PRES	4	13%	2	7%	0	0%	6	10%
COMPUTING VICE PRES	1	3%	1	4%	0	0%	2	3%
OTHER OFFICER	4	13%	6	21%	0	0%	10	17%
TOTAL REPORTED	30	100%	28	100%	0	0%	58	100%
MED-LARGE INSTITUTIONS								
PRESIDENT	1	6%	0	0%	0	0%	1	5%
EXECUTIVE VICE PRES	2	13%	0	0%	0	0%	2	11%
ADMIN VICE PRES	3	19%	1	33%	0	0%	4	21%
ACADEMIC VICE PRES	1	6%	0	0%	0	0%	1	5%
BUSINESS VICE PRES	5	31%	0	0%	0	0%	5	26%
COMPUTING VICE PRES	2	13%	1	33%	0	0%	3	16%
OTHER OFFICER	2	13%	1	33%	0	0%	3	16%
TOTAL REPORTED	16	100%	3	100%	0	0%	19	100%
LARGE INSTITUTIONS								
PRESIDENT	0	0%	0	0%	0	0%	0	0%
EXECUTIVE VICE PRES	1	33%	0	0%	0	0%	1	33%
ADMIN VICE PRES	2	67%	0	0%	0	0%	2	67%
ACADEMIC VICE PRES	0	0%	0	0%	0	0%	0	0%
BUSINESS VICE PRES	0	0%	0	0%	0	0%	0	0%
COMPUTING VICE PRES	0	0%	0	0%	0	0%	0	0%
OTHER OFFICER	0	0%	0	0%	0	0%	0	0%
TOTAL REPORTED	3	100%	0	0%	0	0%	3	100%
ALL SIZES								
PRESIDENT	5	9%	8	10%	0	0%	13	9%
EXECUTIVE VICE PRES	8	14%	7	9%	0	0%	15	11%
ADMIN VICE PRES	16	28%	16	20%	0	0%	32	23%
ACADEMIC VICE PRES	5	9%	11	14%	0	0%	16	12%
BUSINESS VICE PRES	11	19%	23	29%	0	0%	34	25%
COMPUTING VICE PRES	3	5%	2	3%	0	0%	5	4%
OTHER OFFICER	9	16%	13	16%	0	0%	22	16%
TOTAL REPORTED	57	100%	80	100%	0	0%	137	100%

1985 TABLE 3.3
ADMINISTRATIVE INFORMATION SYSTEMS REPORTING
All Separate Installations

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
PRESIDENT	0	0%	1	4%	1	33%	2	6%
EXECUTIVE VICE PRES	1	14%	2	8%	0	0%	3	9%
ADMIN VICE PRES	3	43%	5	20%	1	33%	9	26%
ACADEMIC VICE PRES	0	0%	1	4%	0	0%	1	3%
BUSINESS VICE PRES	2	29%	12	48%	1	33%	15	43%
COMPUTING VICE PRES	0	0%	0	0%	0	0%	0	0%
OTHER OFFICER	1	14%	4	16%	0	0%	5	14%
TOTAL REPORTED	7	100%	25	100%	3	100%	35	100%
MEDIUM INSTITUTIONS								
PRESIDENT	2	12%	1	5%	1	8%	4	8%
EXECUTIVE VICE PRES	1	6%	1	5%	1	8%	3	6%
ADMIN VICE PRES	5	29%	6	27%	6	46%	17	33%
ACADEMIC VICE PRES	2	12%	2	9%	0	0%	4	8%
BUSINESS VICE PRES	4	24%	5	23%	5	38%	14	27%
COMPUTING VICE PRES	1	6%	0	0%	0	0%	1	2%
OTHER OFFICER	2	12%	7	32%	0	0%	9	17%
TOTAL REPORTED	17	100%	22	100%	13	100%	52	100%
MED-LARGE INSTITUTIONS								
PRESIDENT	0	0%	0	0%	1	33%	1	3%
EXECUTIVE VICE PRES	0	0%	1	11%	0	0%	1	3%
ADMIN VICE PRES	9	53%	4	44%	1	33%	14	48%
ACADEMIC VICE PRES	1	6%	1	11%	0	0%	2	7%
BUSINESS VICE PRES	3	18%	1	11%	1	33%	5	17%
COMPUTING VICE PRES	3	18%	1	11%	0	0%	4	14%
OTHER OFFICER	1	6%	1	11%	0	0%	2	7%
TOTAL REPORTED	17	100%	9	100%	3	100%	29	100%
LARGE INSTITUTIONS								
PRESIDENT	0	0%	0	0%	0	0%	0	0%
EXECUTIVE VICE PRES	1	7%	0	0%	1	33%	2	11%
ADMIN VICE PRES	4	27%	0	0%	1	33%	5	28%
ACADEMIC VICE PRES	0	0%	0	0%	0	0%	0	0%
BUSINESS VICE PRES	5	33%	0	0%	0	0%	5	28%
COMPUTING VICE PRES	1	7%	0	0%	0	0%	1	6%
OTHER OFFICER	4	27%	0	0%	1	33%	5	28%
TOTAL REPORTED	15	100%	0	0%	3	100%	18	100%
ALL SIZES								
PRESIDENT	2	4%	2	4%	3	14%	7	5%
EXECUTIVE VICE PRES	3	5%	4	7%	2	9%	9	7%
ADMIN VICE PRES	21	38%	15	27%	9	41%	45	34%
ACADEMIC VICE PRES	3	5%	4	7%	0	0%	7	5%
BUSINESS VICE PRES	14	25%	18	32%	7	32%	39	29%
COMPUTING VICE PRES	5	9%	1	2%	0	0%	6	4%
OTHER OFFICER	8	14%	12	21%	1	5%	21	16%
TOTAL REPORTED	56	100%	56	100%	22	100%	134	100%

1985 TABLE 3.4
ADMINISTRATIVE INFORMATION SYSTEMS REPORTING
Separate Installations in Public Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
PRESIDENT	0	0%	1	25%	1	33%	2	22%
EXECUTIVE VICE PRES	0	0%	0	0%	0	0%	0	0%
ADMIN VICE PRES	2	100%	0	0%	1	33%	3	33%
ACADEMIC VICE PRES	0	0%	0	0%	0	0%	0	0%
BUSINESS VICE PRES	0	0%	1	25%	1	33%	2	22%
COMPUTING VICE PRES	0	0%	0	0%	0	0%	0	0%
OTHER OFFICER	0	0%	2	50%	0	0%	2	22%
TOTAL REPORTED	2	100%	4	100%	3	100%	9	100%
MEDIUM INSTITUTIONS								
PRESIDENT	0	0%	0	0%	1	8%	1	4%
EXECUTIVE VICE PRES	0	0%	1	8%	1	8%	2	7%
ADMIN VICE PRES	1	33%	2	17%	6	46%	9	32%
ACADEMIC VICE PRES	0	0%	2	17%	0	0%	2	7%
BUSINESS VICE PRESIDENT	1	33%	4	33%	5	38%	10	36%
COMPUTING VICE PRES	1	33%	0	0%	0	0%	1	4%
OTHER OFFICER	0	0%	3	25%	0	0%	3	11%
TOTAL REPORTED	3	100%	12	100%	13	100%	28	100%
MED-LARGE INSTITUTIONS								
PRESIDENT	0	0%	0	0%	1	33%	1	4%
EXECUTIVE VICE PRES	0	0%	1	14%	0	0%	1	4%
ADMIN VICE PRES	8	57%	3	43%	1	33%	12	50%
ACADEMIC VICE PRES	1	7%	1	14%	0	0%	2	8%
BUSINESS VICE PRES	2	14%	1	14%	1	33%	4	17%
COMPUTING VICE PRES	2	14%	0	0%	0	0%	2	8%
OTHER OFFICER	1	7%	1	14%	0	0%	2	8%
TOTAL REPORTED	14	100%	7	100%	3	100%	24	100%
LARGE INSTITUTIONS								
PRESIDENT	0	0%	0	0%	0	0%	0	0%
EXECUTIVE VICE PRES	1	7%	0	0%	1	33%	2	12%
ADMIN VICE PRES	3	21%	0	0%	1	33%	4	24%
ACADEMIC VICE PRES	0	0%	0	0%	0	0%	0	0%
BUSINESS VICE PRES	5	36%	0	0%	0	0%	5	29%
COMPUTING VICE PRES	1	7%	0	0%	0	0%	1	6%
OTHER OFFICER	4	29%	0	0%	1	33%	5	29%
TOTAL REPORTED	14	100%	0	0%	3	100%	17	100%
ALL SIZES								
PRESIDENT	0	0%	1	4%	3	14%	4	5%
EXECUTIVE VICE PRES	1	3%	2	9%	2	9%	5	6%
ADMIN VICE PRES	14	42%	5	22%	9	41%	28	36%
ACADEMIC VICE PRES	1	3%	3	13%	0	0%	4	5%
BUSINESS VICE PRES	8	24%	6	26%	7	32%	21	27%
COMPUTING VICE PRES	4	12%	0	0%	0	0%	4	5%
OTHER OFFICER	5	15%	6	26%	1	5%	12	15%
TOTAL REPORTED	33	100%	23	100%	22	100%	78	100%

1985 TABLE 3.5
ADMINISTRATIVE INFORMATION SYSTEMS REPORTING
Separate Installations in Private Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
PRESIDENT	0	0%	0	0%	0	0%	0	0%
EXECUTIVE VICE PRES	1	20%	2	10%	0	0%	3	12%
ADMIN VICE PRES	1	20%	5	24%	0	0%	6	23%
ACADEMIC VICE PRES	0	0%	1	5%	0	0%	1	4%
BUSINESS VICE PRES	2	40%	11	52%	0	0%	13	50%
COMPUTING VICE PRES	0	0%	0	0%	0	0%	0	0%
OTHER OFFICER	1	20%	2	10%	0	0%	3	12%
TOTAL REPORTED	5	100%	21	100%	0	0%	26	100%
MEDIUM INSTITUTIONS								
PRESIDENT	2	14%	1	10%	0	0%	3	13%
EXECUTIVE VICE PRES	1	7%	0	0%	0	0%	1	4%
ADMIN VICE PRES	4	29%	4	40%	0	0%	8	33%
ACADEMIC VICE PRES	2	14%	0	0%	0	0%	2	8%
BUSINESS VICE PRES	3	21%	1	10%	0	0%	4	17%
COMPUTING VICE PRES	0	0%	0	0%	0	0%	0	0%
OTHER OFFICER	2	14%	4	40%	0	0%	6	25%
TOTAL REPORTED	14	100%	10	100%	0	0%	24	100%
MED-LARGE INSTITUTIONS								
PRESIDENT	0	0%	0	0%	0	0%	0	0%
EXECUTIVE VICE PRES	0	0%	0	0%	0	0%	0	0%
ADMIN VICE PRES	1	33%	1	50%	0	0%	2	40%
ACADEMIC VICE PRES	0	0%	0	0%	0	0%	0	0%
BUSINESS VICE PRES	1	33%	0	0%	0	0%	1	20%
COMPUTING VICE PRES	1	33%	1	50%	0	0%	2	40%
OTHER OFFICER	0	0%	0	0%	0	0%	0	0%
TOTAL REPORTED	3	100%	2	100%	0	0%	5	100%
LARGE INSTITUTIONS								
PRESIDENT	0	0%	0	0%	0	0%	0	0%
EXECUTIVE VICE PRES	0	0%	0	0%	0	0%	0	0%
ADMIN VICE PRES	1	100%	0	0%	0	0%	1	100%
ACADEMIC VICE PRES	0	0%	0	0%	0	0%	0	0%
BUSINESS VICE PRES	0	0%	0	0%	0	0%	0	0%
COMPUTING VICE PRES	0	0%	0	0%	0	0%	0	0%
OTHER OFFICER	0	0%	0	0%	0	0%	0	0%
TOTAL REPORTED	1	100%	0	0%	0	0%	1	100%
ALL SIZES								
PRESIDENT	2	9%	1	3%	0	0%	3	5%
EXECUTIVE VICE PRES	2	9%	2	6%	0	0%	4	7%
ADMIN VICE PRES	7	30%	10	30%	0	0%	17	30%
ACADEMIC VICE PRES	2	9%	1	3%	0	0%	3	5%
BUSINESS VICE PRES	6	26%	12	36%	0	0%	18	32%
COMPUTING VICE PRES	1	4%	1	3%	0	0%	2	4%
OTHER OFFICER	3	13%	6	18%	0	0%	9	16%
TOTAL REPORTED	23	100%	33	100%	0	0%	56	100%

1985 TABLE 3.6
ADMINISTRATIVE INFORMATION SYSTEMS REPORTING
All Combined Installations

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
PRESIDENT	0	0%	4	11%	3	25%	7	13%
EXECUTIVE VICE PRES	1	20%	3	9%	0	0%	4	8%
ADMIN VICE PRES	1	20%	5	14%	2	17%	8	15%
ACADEMIC VICE PRES	0	0%	6	17%	1	8%	7	13%
BUSINESS VICE PRES	0	0%	11	31%	4	33%	15	29%
COMPUTING VICE PRES	0	0%	0	0%	0	0%	0	0%
OTHER OFFICER	3	60%	6	17%	2	17%	11	21%
TOTAL REPORTED	5	100%	35	100%	12	100%	52	100%
MEDIUM INSTITUTIONS								
PRESIDENT	2	7%	11	20%	4	16%	17	16%
EXECUTIVE VICE PRES	4	14%	6	11%	2	8%	12	11%
ADMIN VICE PRES	8	29%	15	27%	8	32%	31	29%
ACADEMIC VICE PRES	4	14%	10	18%	1	4%	15	14%
BUSINESS VICE PRES	5	18%	3	5%	4	16%	12	11%
COMPUTING VICE PRES	1	4%	1	2%	1	4%	3	3%
OTHER OFFICER	4	14%	9	16%	5	20%	18	17%
TOTAL REPORTED	28	100%	55	100%	25	100%	108	100%
MED-LARGE INSTITUTIONS								
PRESIDENT	2	5%	2	11%	1	17%	5	8%
EXECUTIVE VICE PRES	5	14%	1	6%	1	17%	7	11%
ADMIN VICE PRES	6	16%	4	22%	3	50%	13	21%
ACADEMIC VICE PRES	3	8%	4	22%	0	0%	7	11%
BUSINESS VICE PRES	7	19%	1	6%	1	17%	9	15%
COMPUTING VICE PRES	2	5%	0	0%	0	0%	2	3%
OTHER OFFICER	12	32%	6	33%	0	0%	18	30%
TOTAL REPORTED	37	100%	18	100%	6	100%	61	100%
LARGE INSTITUTIONS								
PRESIDENT	3	12%	1	50%	0	0%	4	12%
EXECUTIVE VICE PRES	3	12%	0	0%	2	33%	5	15%
ADMIN VICE PRES	7	27%	1	50%	1	17%	9	26%
ACADEMIC VICE PRES	0	0%	0	0%	1	17%	1	3%
BUSINESS VICE PRESIDENT	3	12%	0	0%	0	0%	3	9%
COMPUTING VICE PRES	3	12%	0	0%	0	0%	3	9%
OTHER OFFICER	7	27%	0	0%	2	33%	9	26%
TOTAL REPORTED	26	100%	2	100%	6	100%	34	100%
ALL SIZES								
PRESIDENT	7	7%	18	16%	8	16%	33	13%
EXECUTIVE VICE PRES	13	14%	10	9%	5	10%	28	11%
ADMIN VICE PRES	22	23%	25	23%	14	29%	61	24%
ACADEMIC VICE PRES	7	7%	20	18%	3	6%	30	12%
BUSINESS VICE PRES	15	16%	15	14%	9	18%	39	15%
COMPUTING VICE PRES	6	6%	1	1%	1	2%	8	3%
OTHER OFFICER	26	27%	21	19%	9	18%	56	22%
TOTAL REPORTED	96	100%	110	100%	49	100%	255	100%

1985 TABLE 3.7
ADMINISTRATIVE INFORMATION SYSTEMS REPORTING
Combined Installations in Public Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
PRESIDENT	0	0%	2	29%	3	25%	5	24%
EXECUTIVE VICE PRES	0	0%	0	0%	0	0%	0	0%
ADMIN VICE PRES	1	50%	2	29%	2	17%	5	24%
ACADEMIC VICE PRES	0	0%	0	0%	1	8%	1	5%
BUSINESS VICE PRES	0	0%	1	14%	4	33%	5	24%
COMPUTING VICE PRESIDENT	0	0%	0	0%	0	0%	0	0%
OTHER OFFICER	1	50%	2	29%	2	17%	5	24%
TOTAL REPORTED	2	100%	7	100%	12	100%	21	100%
MEDIUM INSTITUTIONS								
PRESIDENT	0	0%	6	16%	4	16%	10	14%
EXECUTIVE VICE PRES	2	17%	4	11%	2	8%	8	11%
ADMIN VICE PRES	2	17%	12	32%	8	32%	22	30%
ACADEMIC VICE PRES	2	17%	6	16%	1	4%	9	12%
BUSINESS VICE PRES	4	33%	2	5%	4	16%	10	14%
COMPUTING VICE PRES	0	0%	0	0%	1	4%	1	1%
OTHER OFFICER	2	17%	7	19%	5	20%	14	19%
TOTAL REPORTED	12	100%	37	100%	25	100%	74	100%
MED-LARGE INSTITUTIONS								
PRESIDENT	1	4%	2	13%	1	17%	4	9%
EXECUTIVE VICE PRES	3	13%	1	6%	1	17%	5	11%
ADMIN VICE PRES	4	17%	4	25%	3	50%	11	24%
ACADEMIC VICE PRES	2	8%	3	19%	0	0%	5	11%
BUSINESS VICE PRES	3	13%	1	6%	1	17%	5	11%
COMPUTING VICE PRES	1	4%	0	0%	0	0%	1	2%
OTHER OFFICER	10	42%	5	31%	0	0%	15	33%
TOTAL REPORTED	24	100%	16	100%	6	100%	46	100%
LARGE INSTITUTIONS								
PRESIDENT	3	13%	1	50%	0	0%	4	13%
EXECUTIVE VICE PRES	2	8%	0	0%	2	33%	4	13%
ADMIN VICE PRES	6	25%	1	50%	1	17%	8	25%
ACADEMIC VICE PRES	0	0%	0	0%	1	17%	1	3%
BUSINESS VICE PRES	3	13%	0	0%	0	0%	3	9%
COMPUTING VICE PRES	3	13%	0	0%	0	0%	3	9%
OTHER OFFICER	7	29%	0	0%	2	33%	9	28%
TOTAL REPORTED	24	100%	2	100%	6	100%	32	100%
ALL SIZES								
PRESIDENT	4	6%	11	18%	8	16%	23	13%
EXECUTIVE VICE PRES	7	11%	5	8%	5	10%	17	10%
ADMIN VICE PRES	13	21%	19	31%	14	29%	46	27%
ACADEMIC VICE PRES	4	6%	9	15%	3	6%	16	9%
BUSINESS VICE PRES	10	16%	4	6%	9	18%	23	13%
COMPUTING VICE PRES	4	6%	0	0%	1	2%	5	3%
OTHER OFFICER	20	32%	14	23%	9	18%	43	25%
TOTAL REPORTED	62	100%	62	100%	49	100%	173	100%

1985 TABLE 3.8
ADMINISTRATIVE INFORMATION SYSTEMS REPORTING
Combined Installations in Private Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
PRESIDENT	0	0%	2	7%	0	0%	2	6%
EXECUTIVE VICE PRES.	1	33%	3	11%	0	0%	4	13%
ADMIN. VICE PRES.	0	0%	3	11%	0	0%	3	10%
ACADEMIC VICE PRES.	0	0%	6	21%	0	0%	6	19%
BUSINESS VICE PRES.	0	0%	10	36%	0	0%	10	2%
COMPUTING VICE PRES.	0	0%	0	0%	0	0%	0	0%
OTHER OFFICER	2	67%	4	14%	0	0%	6	19%
TOTAL REPORTED	3	100%	28	100%	0	0%	31	100%
MEDIUM INSTITUTIONS								
PRESIDENT	2	13%	5	28%	0	0%	7	21%
EXECUTIVE VICE PRES.	2	13%	2	11%	0	0%	4	12%
ADMIN. VICE PRES.	6	38%	3	17%	0	0%	9	26%
ACADEMIC VICE PRES.	2	13%	4	22%	0	0%	6	18%
BUSINESS VICE PRES.	1	6%	1	6%	0	0%	2	6%
COMPUTING VICE PRES.	1	6%	1	6%	0	0%	2	6%
OTHER OFFICER	2	13%	2	11%	0	0%	4	12%
TOTAL REPORTED	16	100%	18	100%	0	0%	34	100%
MED-LARGE INSTITUTIONS								
PRESIDENT	1	8%	0	0%	0	0%	1	7%
EXECUTIVE VICE PRES.	2	15%	0	0%	0	0%	2	13%
ADMIN. VICE PRES.	2	15%	0	0%	0	0%	2	13%
ACADEMIC VICE PRES.	1	8%	1	50%	0	0%	2	13%
BUSINESS VICE PRES.	4	31%	0	0%	0	0%	4	27%
COMPUTING VICE PRES.	1	8%	0	0%	0	0%	1	7%
OTHER OFFICER	2	15%	1	50%	0	0%	3	20%
TOTAL REPORTED	13	100%	2	100%	0	0%	15	100%
LARGE INSTITUTIONS								
PRESIDENT	0	0%	0	0%	0	0%	0	0%
EXECUTIVE VICE PRES.	1	50%	0	0%	0	0%	1	50%
ADMIN. VICE PRES.	1	50%	0	0%	0	0%	1	50%
ACADEMIC VICE PRES.	0	0%	0	0%	0	0%	0	0%
BUSINESS VICE PRES.	0	0%	0	0%	0	0%	0	0%
COMPUTING VICE PRES.	0	0%	0	0%	0	0%	0	0%
OTHER OFFICER	0	0%	0	0%	0	0%	0	0%
TOTAL REPORTED	2	100%	0	0%	0	0%	2	100%
ALL SIZES								
PRESIDENT	3	9%	7	15%	0	0%	10	12%
EXECUTIVE VICE PRES.	6	18%	5	10%	0	0%	11	13%
ADMIN. VICE PRES.	9	26%	6	13%	0	0%	15	18%
ACADEMIC VICE PRES.	3	9%	11	23%	0	0%	14	17%
BUSINESS VICE PRES.	5	15%	11	23%	0	0%	16	20%
COMPUTING VICE PRES.	2	6%	1	2%	0	0%	3	4%
OTHER OFFICER	6	18%	7	15%	0	0%	13	16%
TOTAL REPORTED	34	100%	48	100%	0	0%	82	100%

1985 TABLE 4.0
ACADEMIC COMPUTING REPORTING
All Institutions

	UNIVERSITIES		FOUR YEAR		TWO YEAR		ALL TYPES	
	NO	PCT	NO	PCT	NO	PCT	NO	PCT
SMALL INSTITUTIONS								
PRESIDENT	0	0%	4	9%	0	0%	4	6%
EXECUTIVE VICE PRES	1	10%	2	5%	0	0%	3	5%
ADMIN VICE PRES	2	20%	2	5%	0	0%	4	6%
ACADEMIC VICE PRES	6	60%	28	65%	6	60%	40	63%
BUSINESS VICE PRES	0	0%	4	9%	1	10%	5	8%
COMPUTING VICE PRES	0	0%	0	0%	0	0%	0	0%
OTHER OFFICER	1	10%	3	7%	3	30%	7	11%
TOTAL REPORTED	10	100%	43	100%	10	100%	63	100%
MEDIUM INSTITUTIONS								
PRESIDENT	1	3%	8	14%	2	8%	11	10%
EXECUTIVE VICE PRES	3	9%	4	7%	2	8%	9	8%
ADMIN VICE PRESIDENT	6	18%	12	21%	3	12%	21	18%
ACADEMIC VICE PRES	14	41%	20	36%	8	32%	42	37%
BUSINESS VICE PRES	4	12%	2	4%	3	12%	9	8%
COMPUTING VICE PRES	1	3%	1	2%	1	4%	3	3%
OTHER OFFICER	5	15%	9	16%	6	24%	20	17%
TOTAL REPORTED	34	100%	56	100%	25	100%	115	100%
MED-LARGE INSTITUTIONS								
PRESIDENT	2	5%	2	11%	1	13%	5	7%
EXECUTIVE VICE PRES	3	7%	0	0%	1	13%	4	6%
ADMIN VICE PRES	6	14%	4	21%	2	25%	12	17%
ACADEMIC VICE PRES	12	29%	9	47%	3	38%	24	35%
BUSINESS VICE PRES	4	10%	1	5%	0	0%	5	7%
COMPUTING VICE PRES	3	7%	1	5%	0	0%	4	6%
OTHER OFFICER	12	29%	2	11%	1	13%	15	22%
TOTAL REPORTED	42	100%	19	100%	8	100%	69	100%
LARGE INSTITUTIONS								
PRESIDENT	1	4%	1	33%	0	0%	2	6%
EXECUTIVE VICE PRES	2	9%	0	0%	0	0%	2	6%
ADMIN VICE PRES	3	13%	1	33%	0	0%	4	13%
ACADEMIC VICE PRES	4	17%	1	33%	3	60%	8	26%
BUSINESS VICE PRES	2	9%	0	0%	0	0%	2	6%
COMPUTING VICE PRES	3	13%	0	0%	0	0%	3	10%
OTHER OFFICER	8	35%	0	0%	2	40%	10	32%
TOTAL REPORTED	23	100%	3	100%	5	100%	31	100%
ALL SIZES								
PRESIDENT	4	4%	15	12%	3	6%	22	8%
EXECUTIVE VICE PRES	9	8%	6	5%	3	6%	18	6%
ADMIN VICE PRES	17	16%	18	15%	5	10%	41	15%
ACADEMIC VICE PRES	36	33%	58	48%	20	42%	114	41%
BUSINESS VICE PRES	10	9%	7	6%	4	8%	21	8%
COMPUTING VICE PRES	7	6%	2	2%	1	2%	10	4%
OTHER OFFICER	26	24%	14	12%	12	25%	52	19%
TOTAL REPORTED	109	100%	121	100%	48	100%	278	100%

1985 TABLE 4.1
ACADEMIC COMPUTING REPORTING
Public Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
PRESIDENT	0	0%	2	29%	0	0%	2	10%
EXECUTIVE VICE PRES	0	0%	0	0%	0	0%	0	0%
ADMIN VICE PRES	1	25%	1	14%	0	0%	2	10%
ACADEMIC VICE PRES	2	50%	2	29%	6	60%	10	48%
BUSINESS VICE PRES	0	0%	0	0%	1	10%	1	5%
COMPUTING VICE PRES	0	0%	0	0%	0	0%	0	0%
OTHER OFFICER	1	25%	2	29%	3	30%	6	29%
TOTAL REPORTED	4	100%	7	100%	10	100%	21	100%
MEDIUM INSTITUTIONS								
PRESIDENT	0	0%	4	11%	2	8%	6	8%
EXECUTIVE VICE PRES	2	14%	3	8%	2	8%	7	9%
ADMIN VICE PRES	3	21%	10	28%	3	12%	16	21%
ACADEMIC VICE PRES	2	14%	9	25%	8	32%	19	25%
BUSINESS VICE PRES	3	21%	2	6%	3	12%	8	11%
COMPUTING VICE PRES	1	7%	0	0%	1	4%	2	3%
OTHER OFFICER	3	21%	8	22%	6	24%	17	23%
TOTAL REPORTED	14	100%	36	100%	25	100%	75	100%
MED-LARGE INSTITUTIONS								
PRESIDENT	1	3%	2	12%	1	13%	4	7%
EXECUTIVE VICE PRES	2	6%	0	0%	1	13%	3	5%
ADMIN VICE PRES	5	16%	4	24%	2	25%	11	19%
ACADEMIC VICE PRES	10	31%	9	53%	3	38%	22	39%
BUSINESS VICE PRES	2	6%	1	6%	0	0%	3	5%
COMPUTING VICE PRES	2	20%	1	50%	0	0%	3	25%
OTHER OFFICER	11	34%	1	6%	1	13%	13	23%
TOTAL REPORTED	32	100%	17	100%	8	100%	57	100%
LARGE INSTITUTIONS								
PRESIDENT	1	5%	1	33%	0	0%	2	7%
EXECUTIVE VICE PRES	2	10%	0	0%	0	0%	2	7%
ADMIN VICE PRES	2	10%	1	33%	0	0%	3	10%
ACADEMIC VICE PRES	4	19%	1	33%	3	60%	8	28%
BUSINESS VICE PRES	2	10%	0	0%	0	0%	2	7%
COMPUTING VICE PRES	3	14%	0	0%	0	0%	3	10%
OTHER OFFICER	7	33%	0	0%	2	40%	9	31%
TOTAL REPORTED	21	100%	3	100%	5	100%	29	100%
ALL SIZES								
PRESIDENT	2	3%	9	14%	3	6%	14	8%
EXECUTIVE VICE PRES	6	8%	3	5%	3	6%	12	7%
ADMIN VICE PRES	11	15%	16	25%	5	10%	32	18%
ACADEMIC VICE PRES	18	25%	21	33%	20	42%	59	32%
BUSINESS VICE PRES	7	10%	3	5%	4	8%	14	8%
COMPUTING VICE PRES	5	7%	0	0%	1	2%	6	3%
OTHER OFFICER	22	31%	11	17%	12	25%	45	25%
TOTAL REPORTED	71	100%	63	100%	48	100%	182	100%

1985 TABLE 4.2
ACADEMIC COMPUTING REPORTING
Private Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
PRESIDENT	0	0%	2	6%	0	0%	2	5%
EXECUTIVE VICE PRES	1	17%	2	6%	0	0%	3	7%
ADMIN VICE PRES	1	17%	1	3%	0	0%	2	5%
ACADEMIC VICE PRES	4	67%	26	72%	0	0%	30	71%
BUSINESS VICE PRES	0	0%	4	11%	0	0%	4	10%
COMPUTING VICE PRES	0	0%	0	0%	0	0%	0	0%
OTHER OFFICER	0	0%	1	3%	0	0%	1	2%
TOTAL REPORTED	6	100%	36	100%	0	0%	42	100%
MEDIUM INSTITUTIONS								
PRESIDENT	1	5%	4	20%	0	0%	5	13%
EXECUTIVE VICE PRES	1	5%	1	5%	0	0%	2	5%
ADMIN VICE PRES	3	15%	2	10%	0	0%	5	13%
ACADEMIC VICE PRES	12	60%	11	55%	0	0%	23	58%
BUSINESS VICE PRES	1	5%	0	0%	0	0%	1	3%
COMPUTING VICE PRES	0	0%	1	5%	0	0%	1	3%
OTHER OFFICER	2	10%	1	5%	0	0%	3	8%
TOTAL REPORTED	20	100%	20	100%	0	0%	40	100%
MED-LARGE INSTITUTIONS								
PRESIDENT	1	10%	0	0%	0	0%	1	8%
EXECUTIVE VICE PRES	1	10%	0	0%	0	0%	1	8%
ADMIN VICE PRES	1	10%	0	0%	0	0%	1	8%
ACADEMIC VICE PRES	2	20%	0	0%	0	0%	2	17%
BUSINESS VICE PRES	2	20%	0	0%	0	0%	2	17%
COMPUTING VICE PRES	2	20%	1	50%	0	0%	3	25%
OTHER OFFICER	1	10%	1	50%	0	0%	2	17%
TOTAL REPORTED	10	100%	2	100%	0	0%	12	100%
LARGE INSTITUTIONS								
PRESIDENT	0	0%	0	0%	0	0%	0	0%
EXECUTIVE VICE PRES	0	0%	0	0%	0	0%	0	0%
ADMIN VICE PRES	1	50%	0	0%	0	0%	1	50%
ACADEMIC VICE PRES	0	0%	0	0%	0	0%	0	0%
BUSINESS VICE PRES	0	0%	0	0%	0	0%	0	0%
COMPUTING VICE PRES	0	0%	0	0%	0	0%	0	0%
OTHER OFFICER	1	50%	0	0%	0	0%	1	50%
TOTAL REPORTED	2	100%	0	0%	0	0%	2	100%
ALL SIZES								
PRESIDENT	2	5%	6	10%	0	0%	8	8%
EXECUTIVE VICE PRES	3	8%	3	5%	0	0%	6	6%
ADMIN VICE PRES	6	16%	3	5%	0	0%	9	9%
ACADEMIC VICE PRES	18	47%	37	64%	0	0%	55	57%
BUSINESS VICE PRES	3	8%	4	7%	0	0%	7	7%
COMPUTING VICE PRES	2	5%	2	3%	0	0%	4	4%
OTHER OFFICER	4	11%	3	5%	0	0%	7	7%
TOTAL REPORTED	38	100%	58	100%	0	0%	96	100%

1985 TABLE 4.3
ACADEMIC COMPUTING REPORTING
All Separate Installations

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
PRESIDENT	0	0%	1	5%	0	0%	1	4%
EXECUTIVE VICE PRES	0	0%	1	5%	0	0%	1	4%
ADMIN VICE PRES	1	20%	0	0%	0	0%	1	4%
ACADEMIC VICE PRES	4	80%	16	80%	2	67%	22	79%
BUSINESS VICE PRES	0	0%	0	0%	0	0%	0	0%
COMPUTING VICE PRES	0	0%	0	0%	0	0%	0	0%
OTHER OFFICER	0	0%	2	10%	1	33%	3	11%
TOTAL REPORTED	5	100%	20	100%	3	100%	28	100%
MEDIUM INSTITUTIONS								
PRESIDENT	0	0%	1	8%	0	0%	1	3%
EXECUTIVE VICE PRES	0	0%	0	0%	1	10%	1	3%
ADMIN VICE PRES	1	8%	1	8%	0	0%	2	6%
ACADEMIC VICE PRES	7	58%	6	46%	6	60%	19	54%
BUSINESS VICE PRES	1	8%	2	15%	1	10%	4	11%
COMPUTING VICE PRES	1	8%	0	0%	0	0%	1	3%
OTHER OFFICER	2	17%	3	23%	2	20%	7	20%
TOTAL REPORTED	12	100%	13	100%	10	100%	35	100%
MED-LARGE INSTITUTIONS								
PRESIDENT	0	0%	0	0%	0	0%	0	0%
EXECUTIVE VICE PRES	1	6%	0	0%	0	0%	1	4%
ADMIN VICE PRES	3	19%	1	14%	0	0%	4	15%
ACADEMIC VICE PRES	8	50%	5	71%	2	67%	15	58%
BUSINESS VICE PRES	0	0%	0	0%	0	0%	0	0%
COMPUTING VICE PRES	1	6%	1	14%	0	0%	2	8%
OTHER OFFICER	3	19%	0	0%	1	33%	4	15%
TOTAL REPORTED	16	100%	7	100%	3	100%	26	100%
LARGE INSTITUTIONS								
PRESIDENT	0	0%	0	0%	0	0%	0	0%
EXECUTIVE VICE PRES	1	11%	0	0%	0	0%	1	9%
ADMIN VICE PRES	0	0%	0	0%	0	0%	0	0%
ACADEMIC VICE PRES	4	44%	0	0%	1	50%	5	45%
BUSINESS VICE PRES	0	0%	0	0%	0	0%	0	0%
COMPUTING VICE PRES	1	11%	0	0%	0	0%	1	9%
OTHER OFFICER	3	33%	0	0%	1	50%	4	36%
TOTAL REPORTED	9	100%	0	0%	2	100%	11	100%
ALL SIZES								
PRESIDENT	0	0%	2	5%	0	0%	2	2%
EXECUTIVE VICE PRES	2	5%	1	3%	1	6%	4	4%
ADMIN VICE PRES	5	12%	2	5%	0	0%	7	7%
ACADEMIC VICE PRES	23	55%	27	68%	11	61%	61	61%
BUSINESS VICE PRES	1	2%	2	5%	1	6%	4	4%
COMPUTING VICE PRES	3	7%	1	3%	0	0%	4	4%
OTHER OFFICER	8	19%	5	13%	5	28%	18	18%
TOTAL REPORTED	42	100%	40	100%	18	100%	100	100%

1985 TABLE 4.4
ACADEMIC COMPUTING REPORTING
Separate Installations in Public Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
PRESIDENT	0	0%	1	33%	0	0%	1	13%
EXECUTIVE VICE PRES	0	0%	0	0%	0	0%	0	0%
ADMIN VICE PRES	0	0%	0	0%	0	0%	0	0%
ACADEMIC VICE PRES	2	100%	1	33%	2	67%	5	63%
BUSINESS VICE PRES	0	0%	0	0%	0	0%	0	0%
COMPUTING VICE PRES	0	0%	0	0%	0	0%	0	0%
OTHER OFFICER	0	0%	1	33%	1	33%	2	25%
TOTAL REPORTED	2	100%	3	100%	3	100%	8	100%
MEDIUM INSTITUTIONS								
PRESIDENT	0	0%	0	0%	0	0%	0	0%
EXECUTIVE VICE PRES	0	0%	0	0%	1	10%	1	5%
ADMIN VICE PRES	1	33%	1	13%	0	0%	2	10%
ACADEMIC VICE PRES	0	0%	2	25%	6	60%	8	38%
BUSINESS VICE PRES	0	0%	2	25%	1	10%	3	14%
COMPUTING VICE PRES	1	33%	0	0%	0	0%	1	5%
OTHER OFFICER	1	33%	3	38%	2	20%	6	29%
TOTAL REPORTED	3	100%	8	100%	10	100%	21	100%
MED-LARGE INSTITUTIONS								
PRESIDENT	0	0%	0	0%	0	0%	0	0%
EXECUTIVE VICE PRES	1	7%	0	0%	0	0%	1	4%
ADMIN VICE PRES	3	21%	1	17%	0	0%	4	17%
ACADEMIC VICE PRES	7	50%	5	83%	2	67%	14	61%
BUSINESS VICE PRES	0	0%	0	0%	0	0%	0	0%
COMPUTING VICE PRES	0	0%	0	0%	0	0%	0	0%
OTHER OFFICER	3	21%	0	0%	1	33%	4	17%
TOTAL REPORTED	14	100%	6	100%	3	100%	23	100%
LARGE INSTITUTIONS								
PRESIDENT	0	0%	0	0%	0	0%	0	0%
EXECUTIVE VICE PRES	1	13%	0	0%	0	0%	1	10%
ADMIN VICE PRES	0	0%	0	0%	0	0%	0	0%
ACADEMIC VICE PRES	4	50%	0	0%	1	50%	5	50%
BUSINESS VICE PRES	0	0%	0	0%	0	0%	0	0%
COMPUTING VICE PRES	1	13%	0	0%	0	0%	1	10%
OTHER OFFICER	2	25%	0	0%	1	50%	3	30%
TOTAL REPORTED	8	100%	0	0%	2	100%	10	100%
ALL SIZES								
PRESIDENT	0	0%	1	6%	0	0%	1	2%
EXECUTIVE VICE PRES	2	7%	0	0%	1	6%	3	5%
ADMIN VICE PRES	4	15%	2	12%	0	0%	6	10%
ACADEMIC VICE PRES	13	48%	8	47%	11	61%	32	52%
BUSINESS VICE PRES	0	0%	2	12%	1	6%	3	5%
COMPUTING VICE PRES	2	7%	0	0%	0	0%	2	3%
OTHER OFFICER	6	22%	4	24%	5	28%	15	24%
TOTAL REPORTED	27	100%	17	100%	18	100%	62	100%

1985 TABLE 4.5
ACADEMIC COMPUTING REPORTING
Separate Installations in Private Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
PRESIDENT	0	0%	0	0%	0	0%	0	0%
EXECUTIVE VICE PRES	0	0%	1	6%	0	0%	1	5%
ADMIN VICE PRES	1	33%	0	0%	0	0%	1	5%
ACADEMIC VICE PRES	2	67%	15	88%	0	0%	17	85%
BUSINESS VICE PRES	0	0%	0	0%	0	0%	0	0%
COMPUTING VICE PRES	0	0%	0	0%	0	0%	0	0%
OTHER OFFICER	0	0%	1	6%	0	0%	1	5%
TOTAL REPORTED	3	100%	17	100%	0	0%	20	100%
MEDIUM INSTITUTIONS								
PRESIDENT	0	0%	1	20%	0	0%	1	7%
EXECUTIVE VICE PRES	0	0%	0	0%	0	0%	0	0%
ADMIN VICE PRES	0	0%	0	0%	0	0%	0	0%
ACADEMIC VICE PRES	7	78%	4	80%	0	0%	11	79%
BUSINESS VICE PRES	1	11%	0	0%	0	0%	1	7%
COMPUTING VICE PRES	0	0%	0	0%	0	0%	0	0%
OTHER OFFICER	1	11%	0	0%	0	0%	1	7%
TOTAL REPORTED	9	100%	5	100%	0	0%	14	100%
MED-LARGE INSTITUTIONS								
PRESIDENT	0	0%	0	0%	0	0%	0	0%
EXECUTIVE VICE PRES	0	0%	0	0%	0	0%	0	0%
ADMIN VICE PRES	0	0%	0	0%	0	0%	0	0%
ACADEMIC VICE PRES	1	50%	0	0%	0	0%	1	33%
BUSINESS VICE PRES	0	0%	0	0%	0	0%	0	0%
COMPUTING VICE PRES	1	50%	1	100%	0	0%	2	67%
OTHER OFFICER	0	0%	0	0%	0	0%	0	0%
TOTAL REPORTED	2	100%	1	100%	0	0%	3	100%
LARGE INSTITUTIONS								
PRESIDENT	0	0%	0	0%	0	0%	0	0%
EXECUTIVE VICE PRES	0	0%	0	0%	0	0%	0	0%
ADMIN VICE PRES	0	0%	0	0%	0	0%	0	0%
ACADEMIC VICE PRES	0	0%	0	0%	0	0%	0	0%
BUSINESS VICE PRES	0	0%	0	0%	0	0%	0	0%
COMPUTING VICE PRES	0	0%	0	0%	0	0%	0	0%
OTHER OFFICER	1	100%	0	0%	0	0%	1	100%
TOTAL REPORTED	1	100%	0	0%	0	0%	1	100%
ALL SIZES								
PRESIDENT	0	0%	1	4%	0	0%	1	3%
EXECUTIVE VICE PRES	0	0%	1	4%	0	0%	1	3%
ADMIN VICE PRES	1	7%	0	0%	0	0%	1	3%
ACADEMIC VICE PRES	10	67%	19	83%	0	0%	29	76%
BUSINESS VICE PRES	1	7%	0	0%	0	0%	1	3%
COMPUTING VICE PRES	1	7%	1	4%	0	0%	2	5%
OTHER OFFICER	2	13%	1	4%	0	0%	3	8%
TOTAL REPORTED	15	100%	23	100%	0	0%	38	100%

1985 TABLE 4.6
ACADEMIC COMPUTING REPORTING
All Combined Installations

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
PRESIDENT	0	0%	3	13%	0	0%	3	9%
EXECUTIVE VICE PRES	1	20%	1	4%	0	0%	2	6%
ADMIN VICE PRES	1	20%	2	9%	0	0%	3	9%
ACADEMIC VICE PRES	2	40%	12	52%	4	57%	18	51%
BUSINESS VICE PRES	0	0%	4	17%	1	14%	5	14%
COMPUTING VICE PRES	0	0%	0	0%	0	0%	0	0%
OTHER OFFICER	1	20%	1	4%	2	29%	4	11%
TOTAL REPORTED	5	100%	23	100%	7	100%	35	100%
MEDIUM INSTITUTIONS								
PRESIDENT	1	5%	7	16%	2	13%	10	13%
EXECUTIVE VICE PRES	3	14%	4	9%	1	7%	8	10%
ADMIN VICE PRES	5	23%	11	26%	3	20%	19	24%
ACADEMIC VICE PRES	7	32%	14	33%	2	13%	23	29%
BUSINESS VICE PRES	3	14%	0	0%	2	13%	5	6%
COMPUTING VICE PRES	0	0%	1	2%	1	7%	2	3%
OTHER OFFICER	3	14%	6	14%	4	27%	13	16%
TOTAL REPORTED	22	100%	43	100%	15	100%	80	100%
MED-LARGE INSTITUTIONS								
PRESIDENT	2	8%	2	17%	1	20%	5	12%
EXECUTIVE VICE PRES	2	8%	0	0%	1	20%	3	7%
ADMIN VICE PRES	3	12%	3	25%	2	40%	8	19%
ACADEMIC VICE PRES	4	15%	4	33%	1	20%	9	21%
BUSINESS VICE PRES	4	15%	1	8%	0	0%	5	12%
COMPUTING VICE PRES	2	8%	0	0%	0	0%	2	5%
OTHER OFFICER	9	35%	2	17%	0	0%	11	26%
TOTAL REPORTED	26	100%	12	100%	5	100%	43	100%
LARGE INSTITUTIONS								
PRESIDENT	1	7%	1	33%	0	0%	2	10%
EXECUTIVE VICE PRES	1	7%	0	0%	0	0%	1	5%
ADMIN VICE PRES	3	21%	1	33%	0	0%	4	20%
ACADEMIC VICE PRES	0	0%	1	33%	2	67%	3	15%
BUSINESS VICE PRES	2	14%	0	0%	0	0%	2	10%
COMPUTING VICE PRES	2	14%	0	0%	0	0%	2	10%
OTHER OFFICER	5	36%	0	0%	1	33%	6	30%
TOTAL REPORTED	14	100%	3	100%	3	100%	20	100%
ALL SIZES								
PRESIDENT	4	6%	13	16%	3	10%	20	11%
EXECUTIVE VICE PRES	7	10%	5	6%	2	7%	14	8%
ADMIN VICE PRES	12	18%	17	21%	5	17%	34	19%
ACADEMIC VICE PRES	13	19%	31	38%	9	30%	53	30%
BUSINESS VICE PRES	9	13%	5	6%	3	10%	17	10%
COMPUTING VICE PRES	4	6%	1	1%	1	3%	6	3%
OTHER OFFICER	18	27%	9	11%	7	23%	34	19%
TOTAL REPORTED	67	100%	81	100%	30	100%	178	100%

1985 TABLE 4.7
ACADEMIC COMPUTING REPORTING
Combined Installations in Public Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
PRESIDENT	0	0%	1	25%	0	0%	1	8%
EXECUTIVE VICE PRES	0	0%	0	0%	0	0%	0	0%
ADMIN VICE PRES	1	0%	1	25%	0	0%	2	15%
ACADEMIC VICE PRES	0	0%	1	25%	4	57%	5	38%
BUSINESS VICE PRES	0	0%	0	0%	1	14%	1	8%
COMPUTING VICE PRES	0	0%	0	0%	0	0%	0	0%
OTHER OFFICER	1	50%	1	25%	2	29%	4	31%
TOTAL REPORTED	2	100%	4	100%	7	100%	13	100%
MEDIUM INSTITUTIONS								
PRESIDENT	0	0%	4	14%	2	13%	6	11%
EXECUTIVE VICE PRES	2	18%	3	11%	1	7%	6	11%
ADMIN VICE PRES	2	18%	9	32%	3	20%	14	26%
ACADEMIC VICE PRES	2	18%	7	25%	2	13%	11	20%
BUSINESS VICE PRES	3	27%	0	0%	2	13%	5	9%
COMPUTING VICE PRES	0	0%	0	0%	1	7%	1	2%
OTHER OFFICER	2	18%	5	18%	4	27%	11	20%
TOTAL REPORTED	11	100%	28	100%	15	100%	54	100%
MED-LARGE INSTITUTIONS								
PRESIDENT	1	6%	2	18%	1	20%	4	12%
EXECUTIVE VICE PRES	1	6%	0	0%	1	20%	2	6%
ADMIN VICE PRES	2	11%	3	27%	2	40%	7	21%
ACADEMIC VICE PRES	3	17%	4	36%	1	20%	8	24%
BUSINESS VICE PRES	2	11%	1	9%	0	0%	3	9%
COMPUTING VICE PRES	1	6%	0	0%	0	0%	1	3%
OTHER OFFICER	8	44%	1	9%	0	0%	9	26%
TOTAL REPORTED	18	100%	11	100%	5	100%	34	100%
LARGE INSTITUTIONS								
PRESIDENT	1	8%	1	33%	0	0%	2	11%
EXECUTIVE VICE PRES	1	8%	0	0%	0	0%	1	5%
ADMIN VICE PRES	2	15%	1	33%	0	0%	3	16%
ACADEMIC VICE PRES	0	0%	1	33%	2	67%	3	16%
BUSINESS VICE PRES	2	15%	0	0%	0	0%	2	11%
COMPUTING VICE PRES	2	15%	0	0%	0	0%	2	11%
OTHER OFFICER	5	38%	0	0%	1	33%	6	32%
TOTAL REPORTED	13	100%	3	100%	3	100%	19	100%
ALL SIZES								
PRESIDENT	2	5%	8	17%	3	10%	13	11%
EXECUTIVE VICE PRES	4	9%	3	7%	2	7%	9	8%
ADMIN VICE PRES	7	16%	14	30%	5	17%	26	22%
ACADEMIC VICE PRES	5	11%	13	28%	9	30%	27	23%
BUSINESS VICE PRES	7	16%	1	2%	3	10%	11	9%
COMPUTING VICE PRES	3	7%	0	0%	1	3%	4	3%
OTHER OFFICER	16	36%	7	15%	7	23%	30	25%
TOTAL REPORTED	44	100%	46	100%	30	100%	120	100%

1985 TABLE 4.8
ACADEMIC COMPUTING REPORTING
Combined Installations in Private Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
PRESIDENT	0	0%	2	11%	0	0%	2	9%
EXECUTIVE VICE PRES	1	33%	1	5%	0	0%	2	9%
ADMIN VICE PRES	0	0%	1	5%	0	0%	1	5%
ACADEMIC VICE PRES	2	67%	11	58%	0	0%	13	9%
BUSINESS VICE PRES	0	0%	4	21%	0	0%	4	18%
COMPUTING VICE PRES	0	0%	0	0%	0	0%	0	0%
OTHER OFFICER	0	0%	0	0%	0	0%	0	0%
TOTAL REPORTED	3	100%	19	100%	0	0%	22	100%
MEDIUM INSTITUTIONS								
PRESIDENT	1	9%	3	20%	0	0%	4	15%
EXECUTIVE VICE PRES	1	9%	1	7%	0	0%	2	8%
ADMIN VICE PRES	3	27%	2	13%	0	0%	5	19%
ACADEMIC VICE PRES	5	45%	7	47%	0	0%	12	46%
BUSINESS VICE PRES	0	0%	0	0%	0	0%	0	0%
COMPUTING VICE PRES	0	0%	1	7%	0	0%	1	4%
OTHER OFFICER	1	9%	1	7%	0	0%	2	8%
TOTAL REPORTED	11	100%	15	100%	0	0%	26	100%
MED-LARGE INSTITUTIONS								
PRESIDENT	1	13%	0	0%	0	0%	1	11%
EXECUTIVE VICE PRES	1	13%	0	0%	0	0%	1	11%
ADMIN VICE PRES	1	13%	0	0%	0	0%	1	11%
ACADEMIC VICE PRES	1	13%	0	0%	0	0%	1	11%
BUSINESS VICE PRES	2	25%	0	0%	0	0%	2	22%
COMPUTING VICE PRES	1	13%	0	0%	0	0%	1	11%
OTHER OFFICER	1	13%	1	100%	0	0%	2	22%
TOTAL REPORTED	8	100%	1	100%	0	0%	9	100%
LARGE INSTITUTIONS								
PRESIDENT	0	0%	0	0%	0	0%	0	0%
EXECUTIVE VICE PRES	0	0%	0	0%	0	0%	0	0%
ADMIN VICE PRES	1	100%	0	0%	0	0%	1	100%
ACADEMIC VICE PRES	0	0%	0	0%	0	0%	0	0%
BUSINESS VICE PRES	0	0%	0	0%	0	0%	0	0%
COMPUTING VICE PRES	0	0%	0	0%	0	0%	0	0%
OTHER OFFICER	0	0%	0	0%	0	0%	0	0%
TOTAL REPORTED	1	100%	0	0%	0	0%	1	100%
ALL SIZES								
PRESIDENT	2	9%	5	14%	0	0%	7	12%
EXECUTIVE VICE PRES	3	13%	2	6%	0	0%	5	9%
ADMIN VICE PRES	5	22%	3	9%	0	0%	8	14%
ACADEMIC VICE PRES	8	35%	18	51%	0	0%	26	45%
BUSINESS VICE PRES	2	9%	4	11%	0	0%	6	10%
COMPUTING VICE PRES	1	4%	1	3%	0	0%	2	3%
OTHER OFFICER	2	9%	2	6%	0	0%	4	7%
TOTAL REPORTED	23	100%	35	100%	0	0%	58	100%

Chapter Three

STAFFING

The CAUSE Member Institution Profile surveys of 1980, 1983, and 1985 all requested the same information about the number of FTE (full-time equivalent) staff members in each of five functional areas: management, analysis and programming, systems programming, operations, and clerical. If the installation combined administrative and academic computing, the respondent was also asked for an estimate of the percent in each category that could be attributed to the administrative information systems activities of the installation.

Staff Distribution by Category

As in previous years, the distribution of administrative information systems staff in 1985 is reasonably consistent for the different institutional groups. The management staff averages 12 percent of total staff, ranging from 10 percent in the larger institutions to as high as 19 percent in small institutions. The applications development staff (analysis/programming) averages 45 percent of total staff, from a low of 32 percent in small institutions to a high of 51 percent in medium-large institutions. Private institutions, also at 51 percent, tend to have a higher percentage of applications development staff than public institutions.

Except in small institutions, where managers tend to perform many of the applications development activities, the percentage of staff devoted to management and to analysis/programming is relatively consistent for all categories. The percentage of staff reported in the systems programmer category averages 6 percent for all groups, with very little variance between institutional groups. The operations staff averaged 28 percent of total staff, private institutions (at 22 percent) being lower than public, and large institutions having the highest percentage (32 percent) among the size categories. Clerical staff averaged 9 percent of total staff, from a low of 8 percent in medium-large institutions to a high of 12 percent in several institution groups.

Figure 7 shows the percentage distribution of FTE staff by category for all institutions. The staffing distribution for each of the twelve major institutional groups follows essentially the same pattern, so only the chart for all institutions appears. Detailed information on administrative systems staffing for 1985 appears in Tables 5.0 through 5.8 at the end of this chapter.

Figure 7

AIS STAFF DISTRIBUTION—ALL INSTITUTIONS
BY STAFF CATEGORY

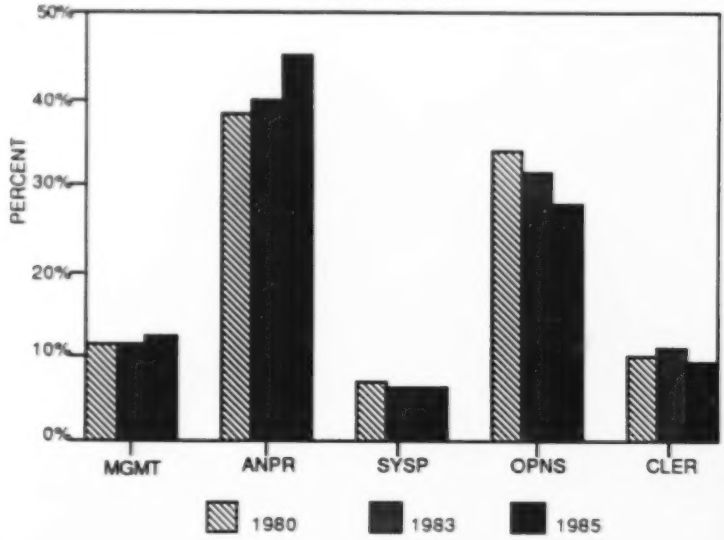


Figure 8

AIS STAFF DISTRIBUTION—MANAGEMENT
BY MAJOR INSTITUTIONAL GROUPS

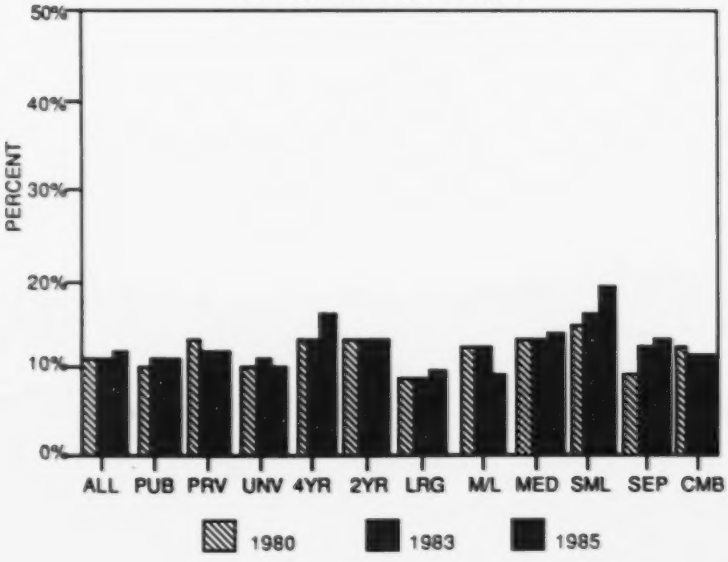


Figure 9

AIS STAFF DISTRIBUTION—ANALYST/PROGRAMMER
BY MAJOR INSTITUTIONAL GROUPS

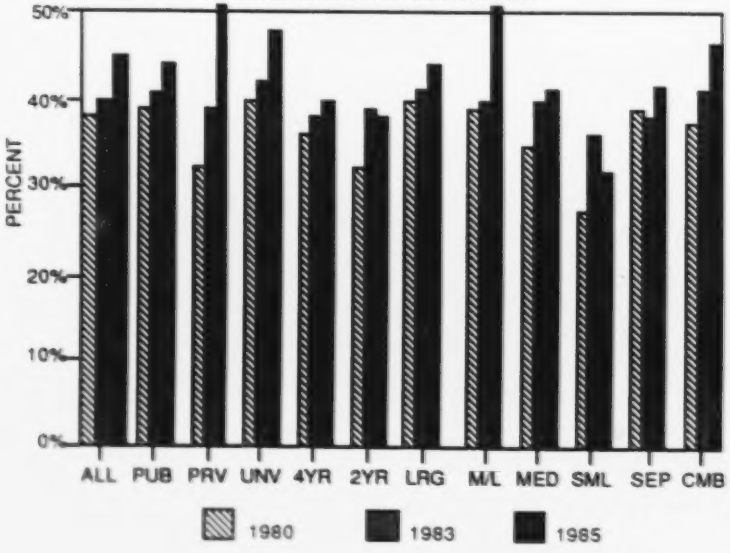


Figure 10

AIS STAFF DISTRIBUTION—SYSTEMS PROGRAMMER
BY MAJOR INSTITUTIONAL GROUPS

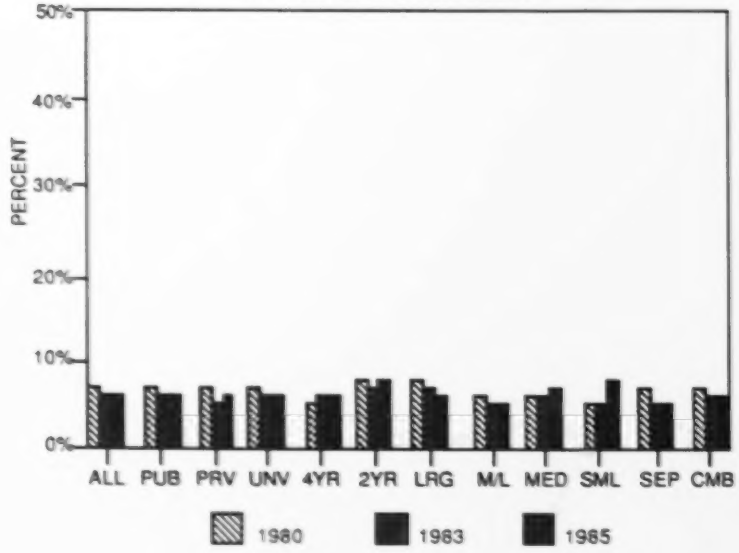


Figure 11

AIS STAFF DISTRIBUTION—OPERATIONS
BY MAJOR INSTITUTIONAL GROUPS

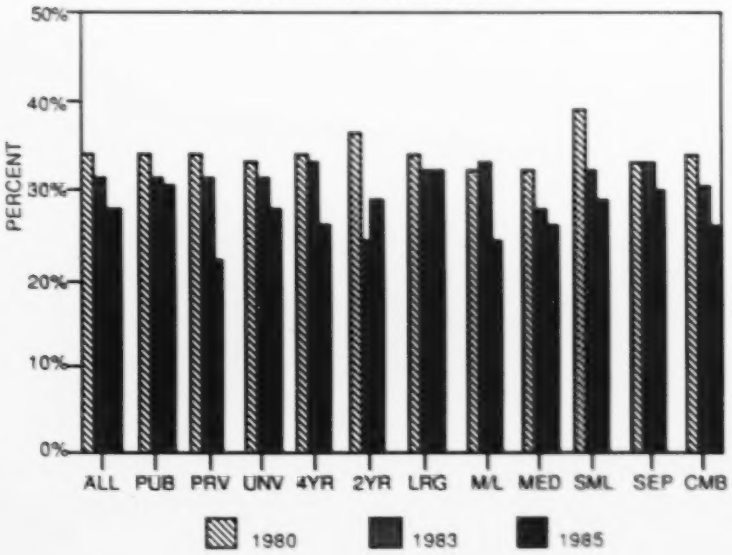
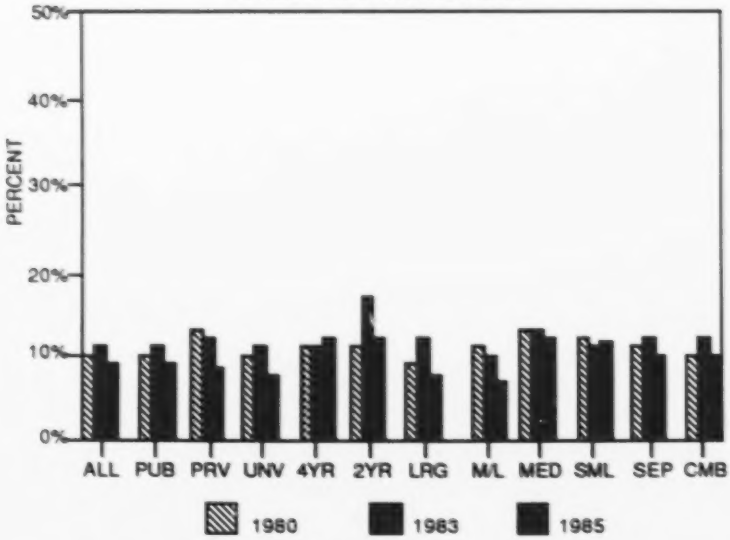


Figure 12

AIS STAFF DISTRIBUTION—CLERICAL
BY MAJOR INSTITUTIONAL GROUPS



The 1985 survey showed a significant increase in the percentage of application development staff (analysts/programmers) and a correspond - ing decrease in the percentage of operations staff in comparison to staff distribution for those categories in the two earlier surveys. The percentage of staff in the other three categories (management, systems programmers and clerical) changed only slightly between 1980 and 1985.

The advent of more on-line systems and more sophisticated operating systems, and the proliferation of microcomputer usage, are the primary reasons for the decrease in the need for operations staff. As more and more administrative applications are identified, the demand for applications development staff increases in all institutional computing environments. Those institutions which were the farthest behind in 1980 have had to increase applications development staff more than others to catch up with the automation of administrative tasks.

Even in institutions where administrative systems software is being purchased instead of developed internally, systems analysts and programmers are required to work with company staff to tailor and implement the proprietary software packages for the institutional environment.

The average increase in the analyst/programmer staff between 1980 and 1985 was 7 percent (from 38 percent to 45 percent). Private institutions showed a 19 percent increase, as opposed to 4 percent for public institutions. Medium-large institutions had the largest increase (13 percent) among the size categories. In 1980, the percentage of application development staff in private institutions was 7 percent below that of public institutions (32 percent vs. 39 percent), and by 1985 they were 7 percent higher (51 percent vs. 44 percent), even though the percentage of analysts/programmers increased in public institutions during the same period. Between 1980 and 1985 the percentage of analysts/programmers in combined academic and administrative computing installations increased more (up 10 percent, from 37 percent to 47 percent) than in separate administrative installations (up only 3 percent, from 39 percent to 42 percent).

The decrease in operations staff between 1980 and 1985 averaged 6 percent, from 34 percent to 28 percent. In 1980, the operations staff represented 34 percent of total staff in both public and private institutions, but by 1985 the operations staff in private institutions represented only 22 percent of total staff while it was 30 percent in public institutions.

The other three staff categories were relatively stable between 1980 and 1985. The management category increased an average of 1 percent (from 11 percent to 12 percent), ranging from a decrease of 2 percent in medium-large institutions to an increase of 4 percent in small institutions. Systems programmers decreased an average of 1 percent from 7 percent to 6 percent between 1980 and 1985, ranging from a decrease of 2 percent in large institutions to an increase of 3 percent in small institutions. This increase in management and corresponding decrease in systems programmers was more evident in separate administrative computing installations than in combined installations. Clerical staff decreased or remained the same in all institutional groups except the four-year and two-year institutions, which experienced a slight increase. Overall, clerical staff decreased from 10 percent to 9 percent between 1980 and 1985.

Figures 13 through 17 show the percentage change between 1980 and 1985 for each of the five staff categories. Detailed information on AIS staff distribution for 1985 appears in Tables 5.0 through 5.8 at the end of this chapter.

Figure 13

AIS STAFF DISTRIBUTION—MANAGEMENT

1980-1985 CHANGE—BY INSTITUTION GROUP

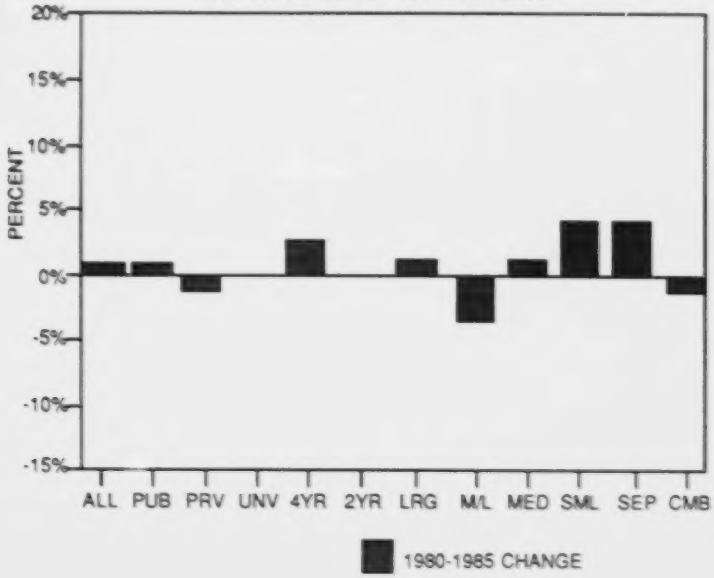


Figure 14

AIS STAFF DISTRIBUTION—ANALYST/PROGRAMMER

1980-1985 CHANGE—BY INSTITUTION GROUP

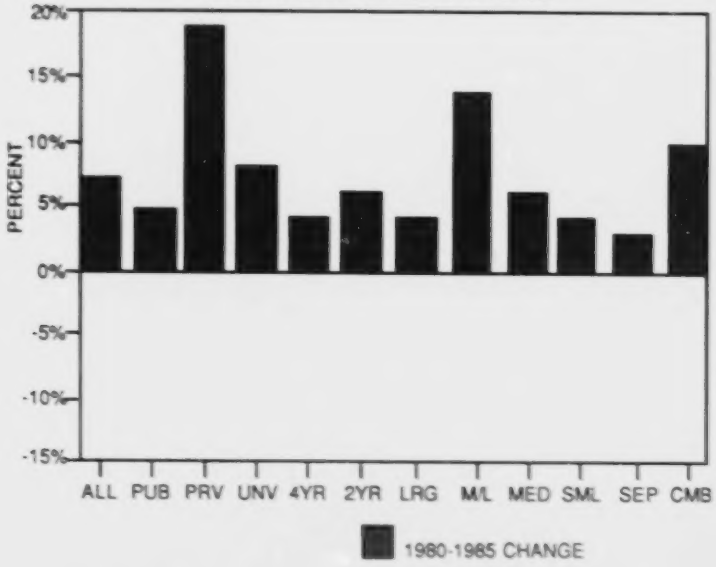


Figure 15

AIS STAFF DISTRIBUTION—SYSTEMS PROGRAMMER

1980-1985 CHANGE—BY INSTITUTION GROUP

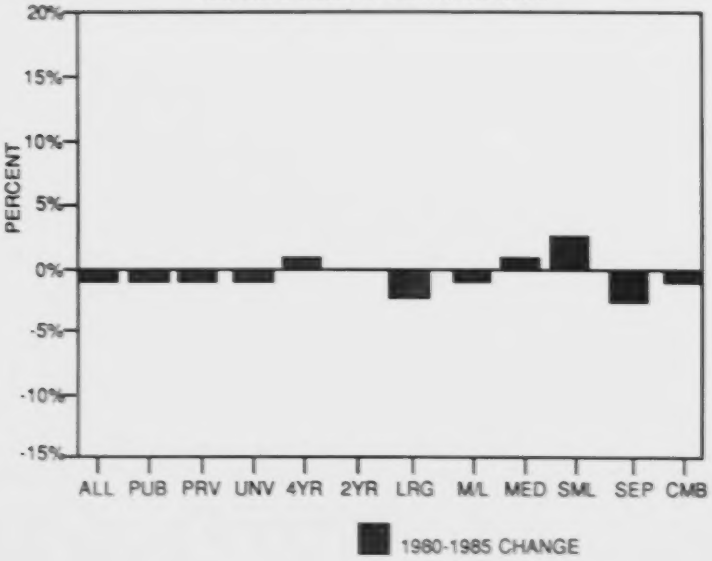


Figure 16

AIS STAFF DISTRIBUTION—OPERATIONS

1980-1985 CHANGE—BY INSTITUTION GROUP

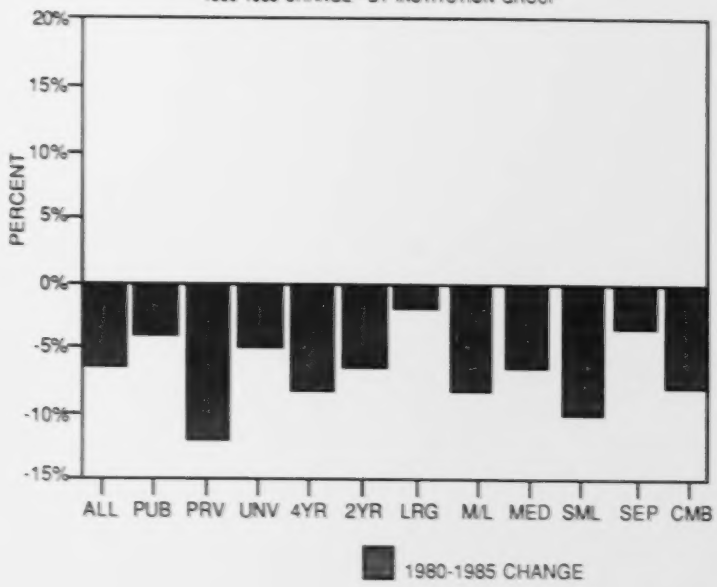
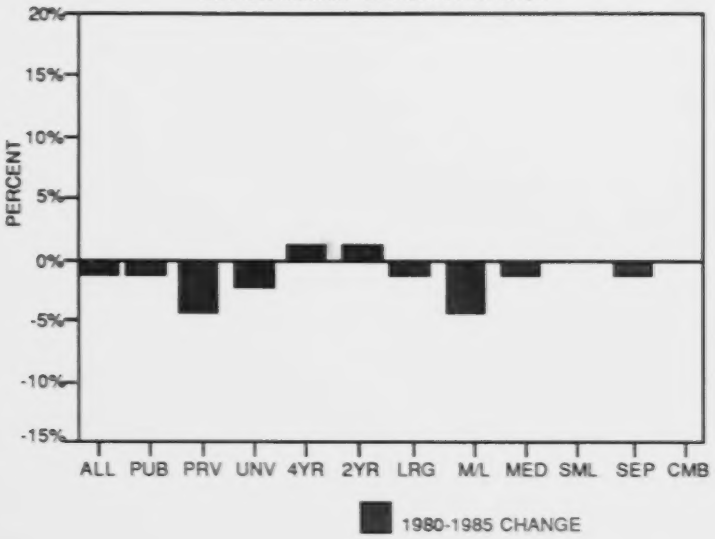


Figure 17

AIS STAFF DISTRIBUTION—CLERICAL

1980-1985 CHANGE—BY INSTITUTION GROUP



Average Staff Size

To summarize the 1980-1985 shifts, Figures 18 through 21 show average staff size in terms of full-time equivalent (FTE) for institutions in each of the four size groups. The data on average staff for all institutional categories in 1985 are displayed in Tables 5.0 through 5.8 at the end of this chapter.

Staff size comparisons are meaningful only among institutions of similar size, and even then, comparisons should be general because of the wide variance between institutional control and type.

Figure 18

AVERAGE AIS STAFF—LARGE INSTITUTIONS
BY STAFF CATEGORY

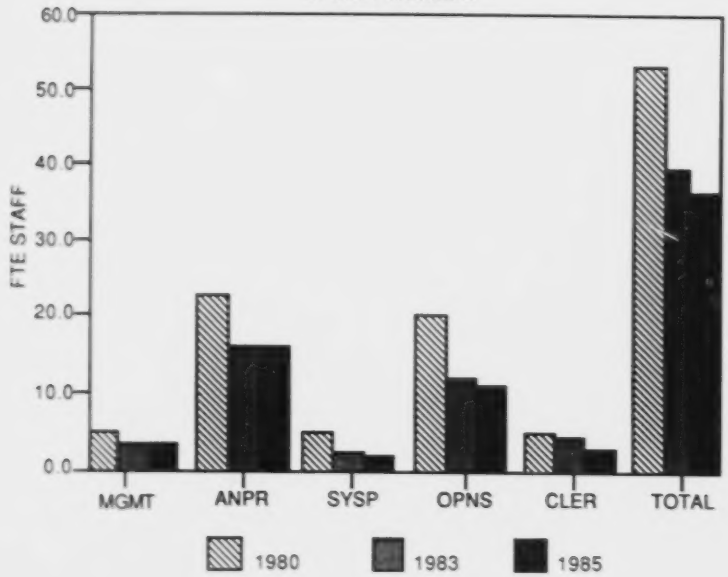


Figure 19

AVERAGE AIS STAFF—MED/LARGE INSTITUTIONS
BY STAFF CATEGORY

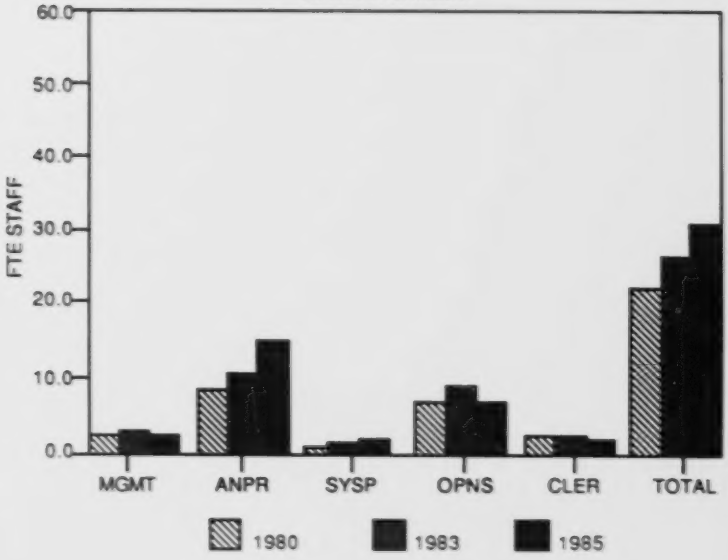


Figure 20

AVERAGE AIS STAFF—MEDIUM-SIZED INSTITUTIONS
BY STAFF CATEGORY

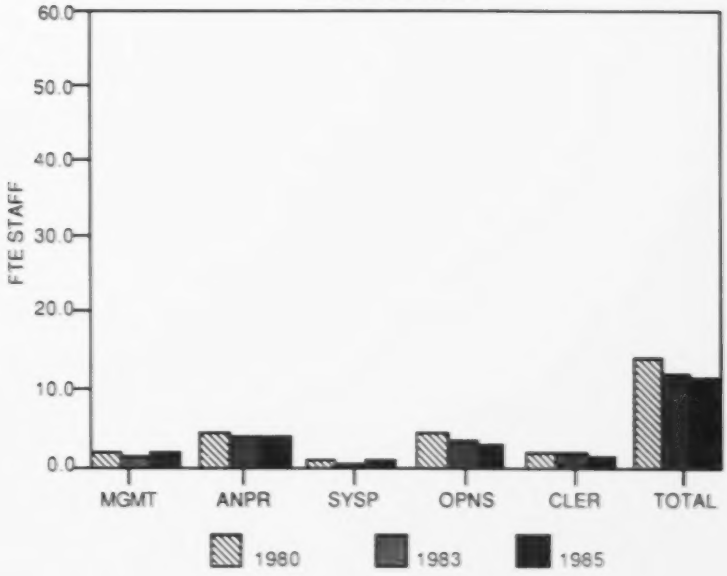
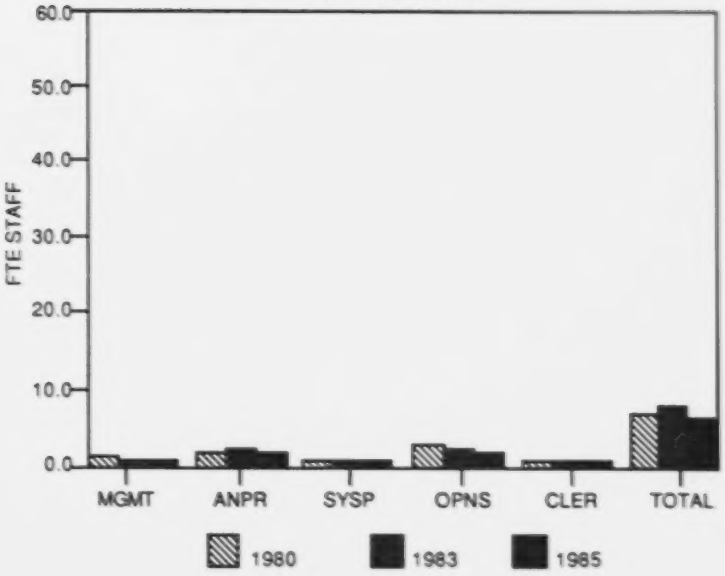


Figure 21

AVERAGE AIS STAFF—SMALL INSTITUTIONS
BY STAFF CATEGORY



As these data show, the total average AIS staff decreased between 1980 and 1985 for all institutional size groups except medium-large institutions. The percentage decrease in average staff size was greatest in the large institutions, where absolute decreases were reported in all five staff categories. The largest increase for any single staff group was in analysts/programmers in the medium-large institutions. Operations and clerical staff decreased between 1980 and 1985 for all institutional sizes. The reasons for this decrease have been described above in the section on staff distribution by category.

The large decrease in the systems programming staff for large institutions is most likely due to the maturation of mainframe operating systems and support software for computer systems in the past few years. Some of the maintenance of the operating systems and the support software in use by institutions is becoming more automatic. In some instances, levels of operating system complexity have discouraged institutions from modifications. Also most institutions have stopped or reduced writing their own support software because of the complexity of their computing environment and because of the need for maintenance after it is written. Most institutions would rather utilize their precious

computing staff resources to satisfy the increasing demand for application computing.

The increase in the size of the systems programming staffs in the other institutional size-groups reflects the movement of these institutions into more complex operating environments. For these institutions, the percentage of AIS staff devoted to systems programming is becoming comparable to that of the large institutions after their staff increase.

In general, the administrative information systems staff size has decreased since 1980. The distribution of that staff, however, indicates that a higher percentage of staff resources is being devoted to working with the end users of the administrative computing resource. This trend is likely to continue as computing facilities are distributed among organizational units and individuals. But even with this distribution of computing, a central AIS staff continues to be necessary to coordinate administrative application systems and to support departmental computing installations within the administrative network.

1985 TABLE 5.0
AIS STAFFING
All Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	AVG FTE	PCT	AVG FTE	PCT	AVG FTE	PCT	AVG FTE	PCT
SMALL INSTITUTIONS								
MANAGEMENT	3.7	16%	1.1	22%	0.7	25%	1.3	19%
ANALYST/PROGR	6.8	30%	1.7	34%	1.0	36%	2.2	32%
SYSTEMS PROGR	1.1	5%	0.5	10%	0.1	4%	0.5	7%
OPERATIONS	8.3	36%	1.2	24%	0.8	29%	2.0	29%
CLERICAL	3.0	13%	0.5	10%	0.2	7%	0.8	12%
TOTAL REPORTED	22.9	100%	5.0	100%	2.8	100%	6.8	100%
INSTNS IN GROUP	8		47		9		64	
MEDIUM INSTITUTIONS								
MANAGEMENT	2.7	13%	1.4	16%	1.2	16%	1.7	14%
ANALYST/PROGR	8.6	41%	3.6	41%	3.0	39%	4.8	41%
SYSTEMS PROGR	1.6	8%	0.4	5%	0.6	8%	0.8	7%
OPERATIONS	5.7	27%	2.2	25%	2.0	26%	3.1	26%
CLERICAL	2.5	12%	1.1	13%	0.9	12%	1.4	12%
TOTAL REPORTED	21.1	100%	8.7	100%	7.7	100%	11.8	100%
INSTNS IN GROUP	36		60		35		131	
MED-LARGE INSTITUTIONS								
MANAGEMENT	3.3	9%	2.5	13%	1.2	11%	2.8	9%
ANALYST/PROGR	21.1	56%	8.4	44%	4.5	39%	15.7	53%
SYSTEMS PROGR	1.9	5%	1.2	6%	0.8	8%	1.6	5%
OPERATIONS	8.9	24%	5.3	27%	3.2	28%	7.2	24%
CLERICAL	2.5	7%	1.8	10%	1.6	14%	2.2	7%
TOTAL REPORTED	37.7	100%	19.3	100%	11.4	100%	29.5	100%
INSTNS IN GROUP	42		19		8		69	
LARGE INSTITUTIONS								
MANAGEMENT	6.5	10%	2.8	14%	3.4	11%	3.7	13%
ANALYST/PROGR	30.1	46%	6.3	32%	11.0	36%	16.4	56%
SYSTEMS PROGR	3.6	5%	1.4	7%	2.1	7%	2.1	7%
OPERATIONS	20.8	32%	5.6	29%	10.2	33%	11.7	40%
CLERICAL	5.0	8%	3.3	17%	3.9	13%	3.0	10%
TOTAL REPORTED	66.0	179%	19.4	53%	30.6	83%	36.9	125%
INSTNS IN GROUP	34		3		8		45	
ALL SIZES								
MANAGEMENT	4.0	10%	1.5	16%	1.4	13%	2.5	12%
ANALYST/PROGR	18.9	46%	3.7	45%	4.0	38%	9.7	45%
SYSTEMS PROGR	2.2	6%	0.6	6%	0.8	8%	1.3	6%
OPERATIONS	11.2	28%	2.4	26%	3.0	29%	5.9	28%
CLERICAL	3.3	8%	1.1	12%	1.3	12%	2.0	9%
TOTAL REPORTED	39.6	186%	9.3	43%	10.5	49%	21.4	100%
INSTNS IN GROUP	120		129		60		309	

1985 TABLE 5.1
AIS STAFFING
Public Institutions

	UNIVERSITIES		FOUR YEAR		TWO YEAR		ALL TYPES	
	AVG FTE	PCT	AVG FTE	PCT	AVG FTE	PCT	AVG FTE	PCT
SMALL INSTITUTIONS								
MANAGEMENT	6.3	17%	1.8	13%	0.7	25%	2.2	16%
ANALYST/PROGR	10.8	28%	5.4	39%	1.0	36%	4.3	32%
SYSTEMS PROGR	1.8	5%	3.0	21%	0.1	4%	1.1	8%
OPERATIONS	14.8	39%	2.4	17%	0.8	29%	4.4	33%
CLERICAL	4.3	11%	1.4	10%	0.2	7%	1.4	10%
TOTAL STAFF (AVG)	38.0	100%	14.0	100%	2.8	100%	13.4	100%
INSTNS IN GROUP	4		4		9		17	
MEDIUM INSTITUTIONS								
MANAGEMENT	2.8	13%	1.5	16%	1.2	16%	1.5	15%
ANALYST/PROGR	8.2	39%	3.9	42%	3.0	39%	4.2	41%
SYSTEMS PROGR	1.4	7%	0.4	4%	0.6	8%	0.6	6%
OPERATIONS	6.0	28%	2.4	26%	2.0	26%	2.8	27%
CLERICAL	2.8	13%	1.0	11%	0.9	12%	1.2	12%
TOTAL REPORTED	21.2	100%	9.2	100%	7.7	100%	10.3	100%
INSTNS IN GROUP	13		36		35		86	
MED-LARGE INSTITUTIONS								
MANAGEMENT	3.1	11%	2.1	12%	1.2	11%	2.6	11%
ANALYST/PROGR	13.7	47%	7.8	43%	4.5	39%	10.7	46%
SYSTEMS PROGR	1.7	6%	1.0	6%	0.9	8%	1.4	6%
OPERATIONS	8.2	28%	5.4	30%	3.2	28%	6.6	28%
CLERICAL	2.3	8%	1.7	9%	1.6	14%	2.0	9%
TOTAL REPORTED	29.0	100%	18.0	100%	11.4	100%	23.3	100%
INSTNS IN GROUP	32		17		8		57	
LARGE INSTITUTIONS								
MANAGEMENT	6.1	9%	2.8	14%	3.4	11%	5.4	10%
ANALYST/PROGR	29.3	45%	6.3	32%	11.0	36%	24.4	44%
SYSTEMS PROGR	3.5	5%	1.4	7%	2.1	7%	3.1	6%
OPERATIONS	20.5	32%	5.6	29%	10.2	33%	17.6	32%
CLERICAL	5.1	8%	3.3	17%	3.9	13%	4.7	9%
TOTAL REPORTED	64.5	100%	19.4	100%	30.6	100%	55.2	100%
INSTNS IN GROUP	33		3		8		44	
ALL SIZES								
MANAGEMENT	4.4	10%	1.7	14%	1.4	13%	2.7	11%
ANALYST/PROGR	18.9	45%	5.2	42%	4.0	38%	10.4	44%
SYSTEMS PROGR	2.4	6%	0.8	6%	0.8	8%	1.4	6%
OPERATIONS	13.1	31%	3.4	27%	3.0	29%	7.2	30%
CLERICAL	3.6	8%	1.4	11%	1.3	12%	2.2	9%
TOTAL REPORTED	42.4	100%	12.5	100%	10.5	100%	23.9	100%
INSTNS IN GROUP	82		62		60		204	

1985 TABLE 5.2
AIS STAFFING
Private Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	AVG FTE	PCT	AVG FTE	PCT	AVG FTE	PCT	AVG FTE	PCT
SMALL INSTITUTIONS								
MANAGEMENT	1.1	14%	1.0	24%	0	0%	2.8	21%
ANALYST/PROGR	2.8	35%	1.3	32%	0	0%	4.1	31%
SYSTEMS PROGR	0.4	%	0.3	7%	0	0%	0.9	7%
OPERATIONS	1.8	23%	1.0	24%	0	0%	3.1	23%
CLERICAL	1.8	23%	0.5	12%	0	0%	1.6	12%
TOTAL STAFF (AVG)	7.9	100%	4.1	100%	0	0%	12.5	93%
INSTNS IN GROUP	4		43		0		47	
MEDIUM INSTITUTIONS								
MANAGEMENT	2.7	13%	1.4	15%	0	0%	2.1	14%
ANALYST/PROGR	8.8	42%	3.1	34%	0	0%	6.0	41%
SYSTEMS PROGR	1.7	8%	0.4	4%	0	0%	1.1	7%
OPERATIONS	5.5	26%	1.9	21%	0	0%	3.8	26%
CLERICAL	2.4	11%	1.2	13%	0	0%	1.8	12%
TOTAL REPORTED	21.1	100%	8.0	87%	0	0%	14.8	100%
INSTNS IN GROUP	23		22		0		45	
MED-LARGE INSTITUTIONS								
MANAGEMENT	3.7	6%	5.8	19%	0	0%	4.0	7%
ANALYST/PROGR	44.7	69%	13.5	45%	0	0%	39.5	67%
SYSTEMS PROGR	2.4	4%	2.5	8%	0	0%	2.4	4%
OPERATIONS	11.1	17%	4.8	15%	0	0%	10.0	17%
CLERICAL	3.1	5%	3.5	12%	0	0%	3.2	5%
TOTAL REPORTED	65.0	100%	29.9	100%	0	0%	59.1	100%
INSTNS IN GROUP	10		2		0		12	
LARGE INSTITUTIONS								
MANAGEMENT	18.0	16%	0	0%	0	0%	18.0	16%
ANALYST/PROGR	57.0	50%	0	0%	0	0%	57.0	50%
SYSTEMS PROGR	6.0	5%	0	0%	0	0%	6.0	5%
OPERATIONS	31.0	27%	0	0%	0	0%	31.0	27%
CLERICAL	2.0	2%	0	0%	0	0%	2.0	2%
TOTAL REPORTED	114.0	100%	0	0%	0	0%	1 14.0	100%
INSTNS IN GROUP	1		0		0		1	
ALL SIZES								
MANAGEMENT	3.2	9%	1.3	21%	0	0%	2.0	12%
ANALYST/PROGR	18.9	56%	2.3	37%	0	0%	8.3	51%
SYSTEMS PROGR	1.9	6%	0.4	6%	0	0%	0.9	6%
OPERATIONS	7.3	22%	1.4	23%	0	0%	3.6	22%
CLERICAL	2.5	7%	0.8	13%	0	0%	1.4	9%
TOTAL REPORTED	33.8	100%	6.2	100%	0	0%	16.2	100%
INSTNS IN GROUP	38		67		0		105	

1985 TABLE 5.3
AIS STAFFING
All Separate Installations

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	AVG FTE	PCT	AVG FTE	PCT	AVG FTE	PCT	AVG FTE	PCT
SMALL INSTITUTIONS								
MANAGEMENT	2.6	17%	1.0	23%	1.0	27%	1.3	23%
ANALYST/PROGR	4.5	29%	1.5	34%	1.2	32%	1.8	32%
SYSTEMS PROGR	0.4	3%	0.2	5%	0	0%	0.2	4%
OPERATIONS	4.8	31%	1.2	27%	0.5	14%	1.6	28%
CLERICAL	3.0	20%	0.5	11%	1.0	27%	0.8	14%
TOTAL REPORTED	15.3	100%	4.4	100%	3.7	100%	5.7	100%
INSTNS IN GROUP	4		24		2		30	
MEDIUM INSTITUTIONS								
MANAGEMENT	3.5	15%	1.5	15%	1.3	18%	2.2	15%
ANALYST/PROGR	9.2	39%	4.0	41%	3.0	41%	5.6	39%
SYSTEMS PROGR	1.2	5%	0.3	3%	0.4	5%	0.7	5%
OPERATIONS	6.6	28%	2.4	25%	1.9	26%	3.8	27%
CLERICAL	3.4	14%	1.5	15%	0.7	10%	2.0	14%
TOTAL REPORTED	23.9	100%	9.7	100%	7.3	100%	14.3	100%
INSTNS IN GROUP	15		14		12		41	
MED-LARGE INSTITUTIONS								
MANAGEMENT	4.4	12%	3.6	13%	1.0	9%	3.9	12%
ANALYST/PROGR	14.9	41%	13.0	46%	3.0	27%	13.3	41%
SYSTEMS PROGR	2.4	7%	1.6	6%	0.5	5%	2.0	6%
OPERATIONS	11.5	31%	7.2	25%	4.0	36%	9.8	30%
CLERICAL	3.5	10%	3.0	11%	2.5	23%	3.3	10%
TOTAL REPORTED	36.7	100%	28.4	100%	11.0	100%	32.3	100%
INSTNS IN GROUP	14		5		2		21	
LARGE INSTITUTIONS								
MANAGEMENT	8.3	10%	0	0%	4.0	13%	6.1	19%
ANALYST/PROGR	39.3	46%	0	0%	9.0	30%	27.5	85%
SYSTEMS PROGR	4.4	5%	0	0%	2.9	8%	3.2	10%
OPERATIONS	27.9	32%	0	0%	10.7	36%	19.7	61%
CLERICAL	5.3	6%	0	0%	4.0	13%	4.1	13%
TOTAL REPORTED	84.6	140%	0	0%	30.0	50%	60.6	188%
INSTNS IN GROUP	14		0		3		17	
ALL SIZES								
MANAGEMENT	5.1	11%	1.5	17%	1.6	15%	3.1	13%
ANALYST/PROGR	19.5	43%	3.6	42%	3.8	35%	10.5	42%
SYSTEMS PROGR	2.4	5%	0.4	4%	0.7	6%	1.3	5%
OPERATIONS	14.1	31%	2.3	26%	3.4	31%	7.5	30%
CLERICAL	4.0	9%	1.1	12%	1.5	14%	2.4	10%
TOTAL REPORTED	45.1	182%	8.9	36%	11.0	44%	24.8	100%
INSTNS IN GROUP	47		43		19		109	

1985 TABLE 5.4

AIS STAFFING

Separate Installations in Public Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	AVG FTE	PCT	AVG FTE	PCT	AVG FTE	PCT	AVG FTE	PCT
SMALL INSTITUTIONS								
MANAGEMENT	3.5	19%	1.0	12%	1.0	27%	1.7	17%
ANALYST/PROGR	4.0	22%	3.5	42%	1.2	32%	3.0	31%
SYSTEMS PROGR	0.5	3%	0.5	6%	0.0	0%	0.4	4%
OPERATIONS	7.5	42%	2.3	28%	0.5	14%	3.3	34%
CLERICAL	2.5	14%	1.0	12%	1.0	27%	1.4	14%
TOTAL STAFF (AVG)	18.0	100%	8.3	100%	3.7	100%	9.8	100%
INSTNS IN GROUP	2		3		2		7	
MEDIUM INSTITUTIONS								
MANAGEMENT	5.3	14%	1.5	13%	1.3	18%	1.9	15%
ANALYST/PROGR	13.0	34%	5.4	48%	3.0	41%	5.1	40%
SYSTEMS PROGR	2.0	5%	0.4	4%	0.4	5%	0.7	5%
OPERATIONS	14.0	37%	3.0	27%	1.9	26%	3.9	30%
CLERICAL	4.0	10%	1.0	9%	0.7	10%	1.3	10%
TOTAL REPORTED	38.3	100%	11.3	100%	7.3	100%	12.9	100%
NSTNS IN GROUP	3		7		12		22	
MED-LARGE INSTITUTIONS								
MANAGEMENT	4.2	12%	3.3	11%	1.0	9%	3.6	11%
ANALYST/PROGR	14.5	41%	13.0	44%	3.0	27%	12.9	41%
SYSTEMS PROGR	2.2	6%	1.5	5%	0.5	5%	1.9	6%
OPERATIONS	11.8	33%	8.5	29%	4.0	36%	10.2	32%
CLERICAL	3.1	9%	3.3	11%	2.5	23%	3.1	10%
TOTAL REPORTED	35.8	100%	29.6	100%	11.0	100%	31.7	100%
INSTNS IN GROUP	12		4		2		18	
LARGE INSTITUTIONS								
MANAGEMENT	7.5	9%	0	0%	4.0	13%	6.8	9%
ANALYST/PROGR	38.0	46%	0	0%	9.0	30%	32.5	45%
SYSTEMS PROGR	4.2	5%	0	0%	2.3	8%	3.9	5%
OPERATIONS	27.0	33%	0	0%	10.7	36%	24.0	33%
CLERICAL	5.6	7%	0	0%	4.0	13%	5.3	7%
TOTAL REPORTED	82.3	100%	0	0%	30.0	100%	72.5	100%
INSTNS IN GROUP	13		0		3		16	
ALL SIZES								
MANAGEMENT	5.7	10%	1.9	12%	1.6	15%	3.6	11%
ANALYST/PROGR	23.8	43%	7.2	45%	3.8	35%	14.1	43%
SYSTEMS PROGR	3.0	5%	0.8	5%	0.7	6%	1.8	5%
OPERATIONS	18.3	33%	4.5	28%	3.4	31%	10.7	32%
CLERICAL	4.2	8%	1.6	10%	1.5	14%	2.8	8%
TOTAL REPORTED	55.0	100%	16.0	100%	11.0	100%	33.0	100%
INSTNS IN GROUP	30		14		19		63	

1985 TABLE 5.5

AIS STAFFING

Separate Installations in Private Institutions

	UNIVERSITIES		FOUR YEAR		TWO YEAR		ALL TYPES	
	AVG FTE	PCT	AVG FTE	PCT	AVG FTE	PCT	AVG FTE	PCT
SMALL INSTITUTIONS								
MANAGEMENT	1.8	14%	1.1	28%	0	0%	3.7	38%
ANALYST/PROGR	5.0	40%	1.2	31%	0	0%	4.9	50%
SYSTEMS PROGR	0.3	2%	0.2	5%	0	0%	0.6	6%
OPERATIONS	2.0	16%	1.0	26%	0	0%	3.5	36%
CLERICAL	3.5	28%	0.4	10%	0	0%	2.1	21%
TOTAL STAFF (AVG)	12.6	100%	3.9	100%	0	0%	14.8	151%
INSTNS IN GROUP	2		21		0		23	
MEDIUM INSTITUTIONS								
MANAGEMENT	3.1	8%	1.5	13%	0	0%	2.5	16%
ANALYST/PROGR	8.3	22%	2.7	24%	0	0%	6.2	39%
SYSTEMS PROGR	1.0	3%	0.2	2%	0	0%	0.7	4%
OPERATIONS	4.7	12%	1.8	16%	0	0%	3.6	23%
CLERICAL	3.3	9%	2.1	19%	0	0%	2.8	18%
TOTAL REPORTED	20.4	53%	8.3	73%	0	0%	15.8	10[illegible]%
INSTNS IN GROUP	12		7		0		19	
MED-LARGE INSTITUTIONS								
MANAGEMENT	6.0	14%	5.0	21%	0	0%	5.7	16%
ANALYST/PROGR	17.5	41%	13.0	54%	0	0%	16.0	44%
SYSTEMS PROGR	3.5	8%	2.0	8%	0	0%	3.0	8%
OPERATIONS	9.5	22%	2.0	8%	0	0%	7.0	19%
CLERICAL	6.0	14%	2.0	8%	0	0%	4.7	13%
TOTAL REPORTED	42.5	100%	24.0	100%	0	0%	36.4	100%
INSTNS IN GROUP	2		1		0		3	
LARGE INSTITUTIONS								
MANAGEMENT	18.0	16%	0	0%	0	0%	18.0	16%
ANALYST/PROGR	57.0	50%	0	0%	0	0%	57.0	50%
SYSTEMS PROGR	6.0	5%	0	0%	0	0%	6.0	5%
OPERATIONS	31.0	27%	0	0%	0	0%	31.0	27%
CLERICAL	2.0	2%	0	0%	0	0%	2.0	2%
TOTAL REPORTED	114.0	100%	0	0%	0	0%	1 14.0	100%
INSTNS IN GROUP	1		0		0		1	
ALL SIZES								
MANAGEMENT	4.1	15%	1.3	24%	0	0%	2.3	17%
ANALYST/PROGR	11.9	43%	1.9	35%	0	0%	5.6	41%
SYSTEMS PROGR	1.5	5%	0.2	4%	0	0%	0.7	5%
OPERATIONS	6.5	24%	1.2	22%	0	0%	3.2	24%
CLERICAL	3.6	13%	0.8	15%	0	0%	1.8	13%
TOTAL REPORTED	27.6	100%	5.4	100%	0	0%	13.6	100%
INSTNS IN GROUP	17		29		0		46	

1985 TABLE 5.6
AIS STAFFING
All Combined Installations

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	AVG FTE	PCT	AVG FTE	PCT	AVG FTE	PCT	AVG FTE	PCT
SMALL INSTITUTIONS								
MANAGEMENT	4.8	16%	1.1	19%	0.6	24%	1.4	18%
ANALYST/PROGR	9.0	30%	1.9	33%	1.0	40%	2.6	33%
SYSTEMS PROGR	1.8	6%	0.9	16%	0.1	4%	0.8	10%
OPERATIONS	11.8	39%	1.2	21%	0.8	32%	2.3	29%
CLERICAL	3.0	10%	0.6	11%	0.0	0%	0.8	10%
TOTAL REPORTED	30.4	100%	5.7	100%	2.5	100%	7.9	100%
INSTNS IN GROUP	4		23		7		34	
MEDIUM INSTITUTIONS								
MANAGEMENT	2.2	12%	1.4	16%	1.1	14%	1.5	14%
ANALYST/PROGR	8.1	42%	3.5	41%	3.0	39%	4.4	41%
SYSTEMS PROGR	1.9	10%	0.4	5%	0.7	9%	0.8	7%
OPERATIONS	5.0	26%	2.2	26%	2.0	26%	2.8	26%
CLERICAL	1.9	10%	1.0	12%	0.9	12%	1.2	11%
TOTAL REPORTED	19.1	100%	8.5	100%	7.7	100%	10.7	100%
INSTNS IN GROUP	21		46		23		90	
MED-LARGE INSTITUTIONS								
MANAGEMENT	2.7	7%	2.1	13%	1.3	11%	2.3	8%
ANALYST/PROGR	24.2	64%	6.8	43%	5.0	43%	16.7	59%
SYSTEMS PROGR	1.6	4%	1.0	6%	1.1	9%	1.4	5%
OPERATIONS	7.6	20%	4.6	29%	3.0	26%	6.1	22%
CLERICAL	2.0	5%	1.5	9%	1.3	11%	1.8	6%
TOTAL REPORTED	38.1	100%	16.0	100%	11.7	100%	28.3	100%
INSTNS IN GROUP	28		14		6		48	
LARGE INSTITUTIONS								
MANAGEMENT	5.2	10%	2.8	14%	3.1	10%	2.7	10%
ANALYST/PROGR	23.6	45%	6.3	32%	12.1	39%	11.5	41%
SYSTEMS PROGR	3.0	6%	1.4	7%	2.0	6%	1.6	6%
OPERATIONS	16.2	31%	5.6	29%	9.8	32%	8.1	29%
CLERICAL	4.7	9%	3.3	17%	3.9	13%	2.6	9%
TOTAL REPORTED	52.7	199%	19.4	73%	30.9	117%	26.5	94%
INSTNS IN GROUP	20		3		5		28	
ALL SIZES								
MANAGEMENT	3.3	9%	1.5	16%	1.3	13%	2.1	11%
ANALYST/PROGR	18.6	51%	3.7	40%	4.1	40%	9.2	48%
SYSTEMS PROGR	2.1	6%	0.7	8%	0.8	8%	1.2	6%
OPERATIONS	9.4	26%	2.4	26%	2.9	28%	5.1	26%
CLERICAL	2.8	8%	1.0	11%	1.2	12%	1.7	9%
TOTAL REPORTED	36.2	188%	9.3	48%	10.3	53%	19.3	100%
INSTNS IN GROUP	73		86		41		200	

1985 TABLE 5.7
AIS STAFFING
Combined Installations in Public Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	AVG FTE	PCT	AVG FTE	PCT	AVG FTE	PCT	AVG FTE	PCT
SMALL INSTITUTIONS								
MANAGEMENT	9.0	16%	4.0	13%	0.6	24%	2.6	16%
ANALYST/PROGR	17.5	30%	11.2	37%	1.0	40%	5.3	33%
SYSTEMS PROGR	3.0	5%	10.4	34%	0.1	4%	1.7	10%
OPERATIONS	22.1	38%	2.4	8%	0.8	32%	5.2	32%
CLERICAL	6.0	10%	2.4	8%	0.0	0%	1.4	9%
TOTAL STAFF (AVG)	57.6	100%	30.4	100%	2.5	100%	16.2	100%
INSTNS IN GROUP	2		1		7		10	
MEDIUM INSTITUTIONS								
MANAGEMENT	2.1	13%	1.5	17%	1.1	14%	1.4	15%
ANALYST/PROGR	6.8	42%	3.5	40%	3.0	39%	3.8	40%
SYSTEMS PROGR	1.2	7%	0.4	5%	0.7	9%	0.6	6%
OPERATIONS	3.6	22%	2.3	26%	2.0	26%	2.4	26%
CLERICAL	2.4	15%	1.1	13%	0.9	12%	1.2	13%
TOTAL REPORTED	16.1	100%	8.8	100%	7.7	100%	9.4	100%
INSTNS IN GROUP	10		31		23		64	
MED-LARGE INSTITUTIONS								
MANAGEMENT	2.5	10%	1.8	12%	1.3	11%	2.1	11%
ANALYST/PROGR	13.2	53%	6.3	43%	5.0	43%	9.6	49%
SYSTEMS PROGR	1.5	6%	0.9	6%	1.1	9%	1.2	6%
OPERATIONS	6.0	24%	4.4	30%	3.0	26%	5.0	26%
CLERICAL	1.9	8%	1.2	8%	1.3	11%	1.6	8%
TOTAL REPORTED	25.1	100%	14.6	100%	11.7	100%	19.5	100%
INSTNS IN GROUP	20		13		6		39	
LARGE INSTITUTIONS								
MANAGEMENT	5.2	10%	2.8	14%	3.1	10%	4.6	10%
ANALYST/PROGR	23.6	45%	6.3	32%	12.1	39%	19.7	43%
SYSTEMS PROGR	3.0	6%	1.4	7%	2.0	6%	2.7	6%
OPERATIONS	16.2	31%	5.6	29%	9.8	32%	13.9	31%
CLERICAL	4.7	9%	3.3	17%	3.9	13%	4.4	10%
TOTAL REPORTED	52.7	100%	19.4	100%	30.9	100%	45.3	100%
INSTNS IN GROUP 20		3		5		28		
ALL SIZES								
MANAGEMENT	3.7	11%	1.7	15%	1.3	13%	2.3	12%
ANALYST/PROGR	16.1	46%	4.6	40%	4.1	40%	8.7	44%
SYSTEMS PROGR	2.1	6%	0.8	7%	0.8	8%	1.3	7%
OPERATIONS	10.1	29%	3.1	27%	2.9	28%	5.6	28%
CLERICAL	3.2	9%	1.3	11%	1.2	12%	2.0	10%
TOTAL REPORTED	35.2	100%	11.5	100%	10.3	100%	19.9	100%
INSTNS IN GROUP	52		48		41		141	

1985 TABLE 5.8
AIS STAFFING
Combined Installations in Private Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	AVG FTE	PCT	AVG FTE	PCT	AVG FTE	PCT	AVG FTE	PCT
SMALL INSTITUTIONS								
MANAGEMENT	0.5	16%	1.0	21%	0	0%	2.3	14%
ANALYST/PROGR	0.6	19%	1.5	32%	0	0%	3.5	22%
SYSTEMS PROGR	0.6	19%	0.5	11%	0	0%	1.1	7%
OPERATIONS	1.5	47%	1.1	23%	0	0%	2.7	17%
CLERICAL	0.0	0%	0.6	13%	0	0%	1.2	7%
TOTAL STAFF (AVG)	3.2	100%	4.7	100%	0	0%	10.8	67%
INSTNS IN GROUP	2		22		0		24	
MEDIUM INSTITUTIONS								
MANAGEMENT	2.3	14%	1.3	15%	0	0%	1.7	12%
ANALYST/PROGR	9.4	58%	3.3	38%	0	0%	5.9	42%
SYSTEMS PROGR	2.5	16%	0.4	5%	0	0%	1.3	9%
OPERATIONS	6.4	40%	2.0	23%	0	0%	3.9	28%
CLERICAL	1.5	9%	0.8	9%	0	0%	1.1	8%
TOTAL REPORTED	22.1	137%	7.8	89%	0	0%	13.9	100%
INSTNS IN GROUP	11		15		0		26	
MED-LARGE INSTITUTIONS								
MANAGEMENT	3.1	4%	6.5	18%	0	0%	3.5	5%
ANALYST/PROGR	51.5	73%	14.0	39%	0	0%	47.3	71%
SYSTEMS PROGR	2.1	3%	3.0	8%	0	0%	2.2	3%
OPERATIONS	11.5	16%	7.2	20%	0	0%	11.0	16%
CLERICAL	2.4	3%	5.0	14%	0	0%	2.7	4%
TOTAL REPORTED	70.6	100%	35.7	100%	0	0%	66.7	100%
INSTNS IN GROUP	8		1		0		9	
LARGE INSTITUTIONS								
MANAGEMENT	0	0%	0	0%	0	0%	0	0%
ANALYST/PROGR	0	0%	0	0%	0	0%	0	0%
SYSTEMS PROGR	0	0%	0	0%	0	0%	0	0%
OPERATIONS	0	0%	0	0%	0	0%	0	0%
CLERICAL	0	0%	0	0%	0	0%	0	0%
TOTAL REPORTED	0	0%	0	0%	0	0%	0	0%
INSTNS IN GROUP	0		0		0		0	
ALL SIZES								
MANAGEMENT	2.4	6%	1.3	19%	0	0%	1.7	9%
ANALYST/PROGR	24.6	63%	2.6	38%	0	0%	10.4	57%
SYSTEMS PROGR	2.2	6%	0.5	7%	0	0%	1.1	6%
OPERATIONS	7.9	20%	1.6	24%	0	0%	3.8	21%
CLERICAL	1.7	4%	0.8	12%	0	0%	1.1	6%
TOTAL REPORTED	38.8	100%	6.8	100%	0	0%	18.1	100%
INSTNS IN GROUP	21		38		0		59	

CHAPTER FOUR

BUDGETS

In the current computing environment of rapidly-changing hardware and software technologies, budgets for administrative information systems draw great attention. Even though the budget base for administrative computing is changing with the shifting of costs of hardware, software, staffing, and networking, and the migration of data processing tasks to user departments and other specialized groups, it is useful to compare trends of expenditures for similar elements over time. The 1980, 1983, and 1985 CAUSE Member Institution Profile surveys all requested AIS budget amounts for the same five categories (staff, hardware, software, communications, and other) to provide a basis for comparison.

An essential consideration in comparison of AIS budgets is that statistics about expenditures can measure only the input to a process; what is accomplished with those expenditures represents output, and both input and output must be considered in any evaluation.

Several factors complicate comparison of reported budgets. For example, in 1980 many responding institutions with combined academic/administrative computing installations found it difficult to apportion costs to administrative information systems, so some of them reported total computing costs. In 1983 and 1985, the Profile survey form specifically requested total costs for separate administrative installations, while for combined installations it requested an estimate of the percentage of each category of expenditure attributable to administrative information systems.

At some institutions, some or all of the application analysts, and perhaps also some programmers, are located in and paid by the user departments, while in others they are a part of the AIS organization. This situation was true in 1980, and is still the case. Further, as staff members of user departments become more computer literate, much of the staff resource for any administrative information systems effort is provided by the user department. The historical analysis of AIS costs for any specific institution is not affected by this situation so long as the organizational structure has remained the same; it is only when costs for groups of institutions are compared that these differences in organizational structure create difficulties.

Hardware costs are also difficult to compare, since a few institutions still lease their computers from the manufacturer while others purchase them. The current trend is for institutions to purchase computing hardware, so this consideration is less of a factor in 1985 than it was in 1980. Also, some institutions build a reserve for future computing hardware, while others receive one-time appropriations for capital expenditures which appear in a single year instead of being amortized in the annual budgets over the expected life of the equipment.

Software may also be leased or purchased, and the costs may be written off in a single year or amortized over a longer period of time. To further complicate matters, some software packages may be leased or purchased by a user department and others acquired by the administrative information systems department.

Communications and supplies costs may also be a part of the AIS budget, or may be paid directly by the user department. For example, at some institutions all computing forms and paper are budgeted centrally, while at others any special forms are charged directly to the user department.

All of the above cautions were mentioned in 1980, and are still valid. In addition, several new considerations will affect future comparisons of administrative information systems budgets.

As more and more administrative systems operate in an on-line mode, institutions treat the expenditures for computer hardware differently. Some budget centrally for every piece of equipment from the mainframe to the keyboard on individual desks. Others budget centrally for the hardware up to the communications port, while all wiring and terminal equipment is charged directly to the user department.

As campuses move into the integration of office automation and administrative information systems, the installation of multi-purpose minicomputers in both administrative and academic departments changes the basis for determining costs. Already the use of microcomputers for administrative applications has made it difficult to trace all of the costs of information systems. Only a few institutions maintain a complete inventory of microcomputers purchased with institutional funds. Further, on some campuses individual administrators are already using personal microcomputers purchased with their own funds to improve their professional productivity. These expenditures seldom appear in the institutional budgets for administrative information systems.

Even with all of these complexities and the changing cost base, comparison of budgets for administrative information systems at a high level of summarization is useful. When all of these costs are aggregated and averaged for hundreds of institutions over time, differences become less important and major trends emerge. As with the data on staffing, the number of institutions in any specific institutional group should be considered when making comparisons.

The total budget for academic and administrative computing in combined installations was requested in the survey, but not specific academic computing budgets. Therefore, no analysis of academic computing budgets is included in this monograph.

Average AIS Annual Budgets

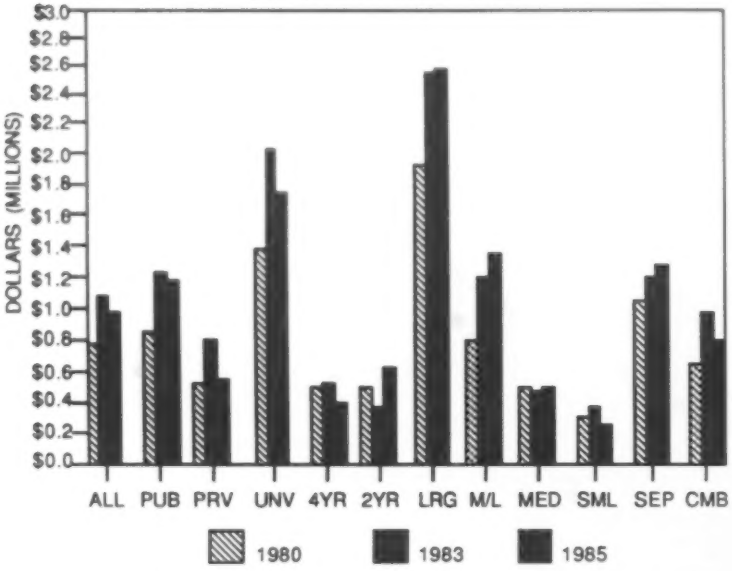
The average AIS budget was examined from three perspectives: by major institutional groups within each of the size categories, as a percent of the total institutional budget, and by the five functional categories within the administrative information systems function.

Complete AIS budget information was reported by 222 of the 400 responding institutions, and total institutional budget information was

reported by 203 institutions. Figure 22 shows the average AIS annual budget for all institutions in all twelve of the major institutional groups. Since comparison of these budgets is only relevant by institutional size, Figures 23 through 26 show graphs of the average AIS annual budgets for each of the four institutional size groups. Detailed summaries of the average AIS annual budgets for 1985 appear in the Tables 6 through 9 series at the end of this chapter.

Figure 22

AVERAGE AIS ANNUAL BUDGET
BY MAJOR INSTITUTIONAL GROUP



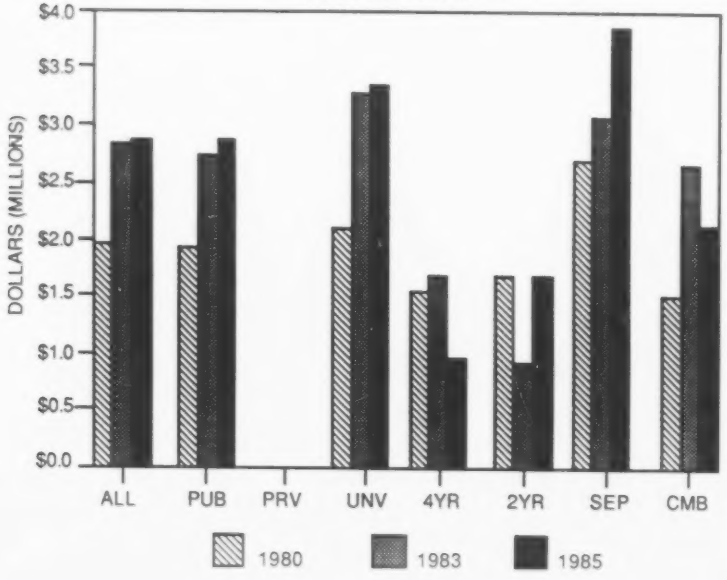
The small number of institutions in some categories make trends difficult to determine, but some trends are identifiable in the categories where data were available for larger numbers of institutions. In general, average AIS annual budgets in all public institutions increased significantly more than those in all private institutions between 1980 and 1985, from $895,000 in 1980 to $1,220,000 in 1985—an increase of 37 percent, or 6.5 percent compounded annually. In that same time, the average AIS annual budget reported by over 70 private institutions increased only 5 percent, from $555,000 to $584,000—2 percent compounded annually.

Large Institutions

The average AIS annual budget for large institutions in 1985 was $2.86 million, up only slightly from the average reported for 1983, but up 44 percent from the same average reported in 1980, which would represent a compounded annual increase of approximately 7.5 percent. This trend is influenced heavily by the public universities, since they represent the majority of the large institutions participating in this survey. The increase between 1980 and 1985 for only the large public universities was from a 1980 average of $2.08 million to $3.35 million, up 61 percent, or approximately 10 percent compounded annually. The numbers of large public four-year and two-year institutions responding are too small to provide reliable trend information. No large private institutions were among the respondents.

Figure 23

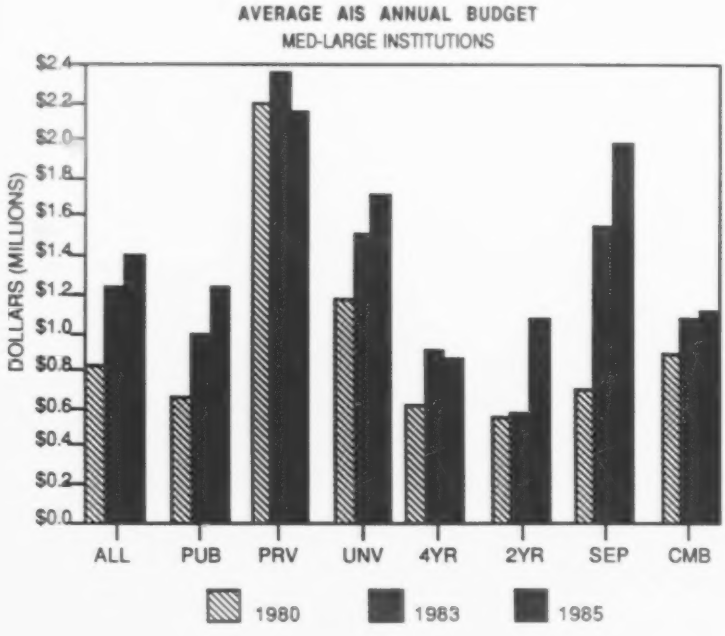
AVERAGE AIS ANNUAL BUDGET
LARGE INSTITUTIONS



Medium-Large Institutions

The data for medium-large institutions (those with enrollments of 8,000-17,999 students) were also dominated by public universities. This group reported an average AIS annual budget of $1.56 million in 1985, up 86 percent from the average of $843,000 reported in 1980, which represents an annual compound increase of approximately 13 percent. The few private medium-large institutions responding to the CAUSE Member Institution Profile surveys reported a lower average AIS annual operating budget in 1985 than in 1980, but it is possible that different institutions responded in 1985 than in 1980. Further, the small number of institutions in this category (fewer than ten each year) is insufficient for determining trends.

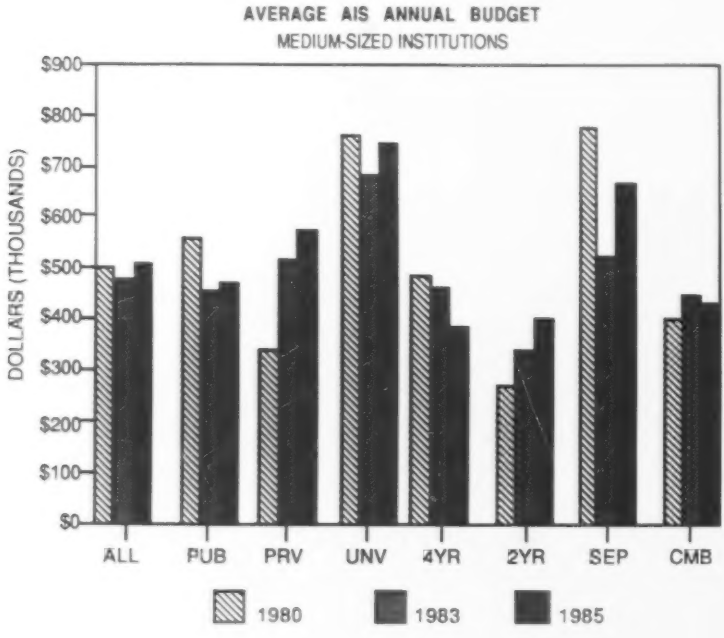
Figure 24



Medium-Sized Institutions

Since there were more than 30 institutions responding in the categories of public and private medium-sized institutions in all three surveys, it is reasonable to assume the average AIS annual budgets reported are indicative of budgeting trends. The average AIS annual budget for the public medium-sized institutions (84 respondents in 1980 and 60 in 1985) decreased from $588,000 in 1980 to $472,000 in 1985. The private medium-sized institutions, however, reported an increase in their budgets for administrative information systems of 68 percent between 1980 and 1985. The average AIS annual budget reported by 32 private medium-sized institutions in 1985 was $576,000, up 68 percent from the $343,000 average reported by 31 institutions in 1980, for a compound annual increase of approximately 11 percent.

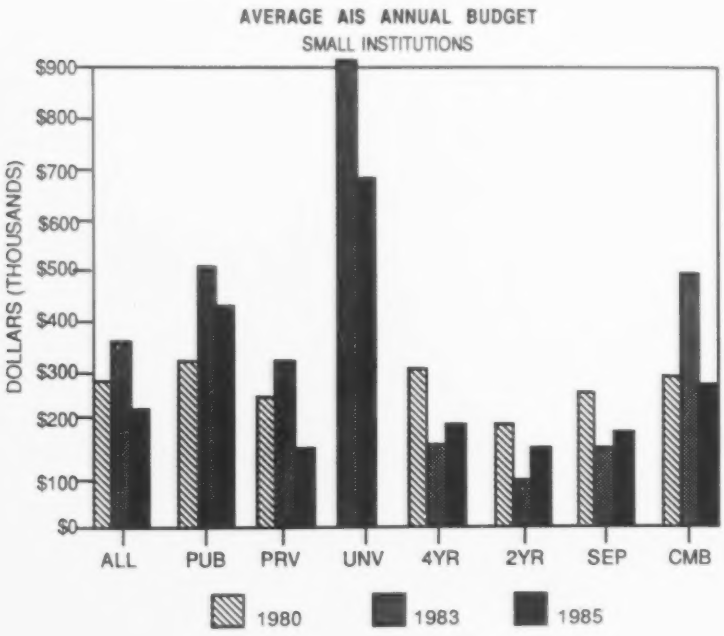
Figure 25



Small Institutions

The trends in average AIS annual budgets in small institutions (those with enrollments of fewer than 2,000 students) for public and private institutions are the reverse of those for medium-sized institutions. The small public institutions reported an increase of 33 percent from an average of $326,000 to an average of $433,000, a compound annual increase of approximately 6 percent. The small private institutions reported an average of $161,000 in 1985, down 36 percent from the average of $264,000 reported in 1980. Both public and private small institutions reported an increase between 1980 and 1983 and a decrease between 1983 and 1985, but the average reported by the small private institutions in 1985 was even below the 1980 levels. This trend could well be the result of the small institutions capitalizing more quickly on the decreasing costs and increasing capabilities of mini- and microcomputers, since few institutions can afford to reduce their basic administrative computing capabilities.

Figure 26



AIS Budget as a Percent of the Institutional Budget

The annual budget for administrative information systems has traditionally been measured as a percent of the total annual operating budget for the entire organization both by industry and by colleges and universities. Although, as stated earlier, this technique measures only input to the process, it is still a measure that should be considered.

For this discussion, the AIS annual budget reported by each institution is shown as a percent of the total annual institutional operating budget reported by that institution.

In 1980 only 5 percent of the institutions reported AIS budgets of less than 1 percent of total operating budgets, and 24 percent reported AIS budgets of 4 percent or more of total operating budgets. In 1985 those numbers reversed to 26 percent of the responding institutions with AIS budgets less than 1 percent of the total and only 4 percent with AIS budgets of 4 percent or more of the total. Even within the "1 percent to 3.9 percent" category there was an increase in the percentage of institutions in the lower third of that category and a decrease in the percentage for the upper two-thirds.

In general, these changes indicate that between 1980 and 1985 annual institutional operating budgets increased at a greater rate than did the budgets for administrative information systems, since there were moderate increases in the average AIS budgets between1980 and 1985. Since the use of computing for administrative information systems is generally increasing in almost all colleges and universities, it is reasonable to surmise that institutions are getting an increasingly better return on their computing investment.

Figures 27 to 29 show graphically the percentages of institutions reporting AIS budgets of less than 1 percent, 1 percent to 3.9 percent, and 4 percent or more of their total operating budgets. Detailed summaries of these percentages for the institutional groups by control, type, and size for 1985 (including a more detailed breakdown of the category "1 percent to 3.9 percent") are shown in Tables 7.0 through 7.8 at the end of this chapter.

Figure 27

AIS BUDGET AS A PERCENT OF INSTITUTIONAL BUDGET

PERCENT REPORTING LESS THAN 1.0 PERCENT

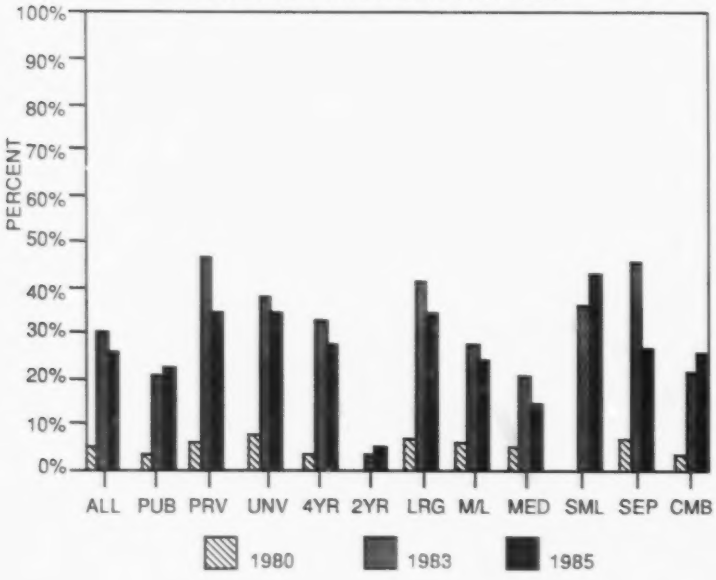


Figure 28

AIS BUDGET AS A PERCENT OF INSTITUTIONAL BUDGET

PERCENT REPORTING 1.0 PERCENT through 3.9 PERCENT

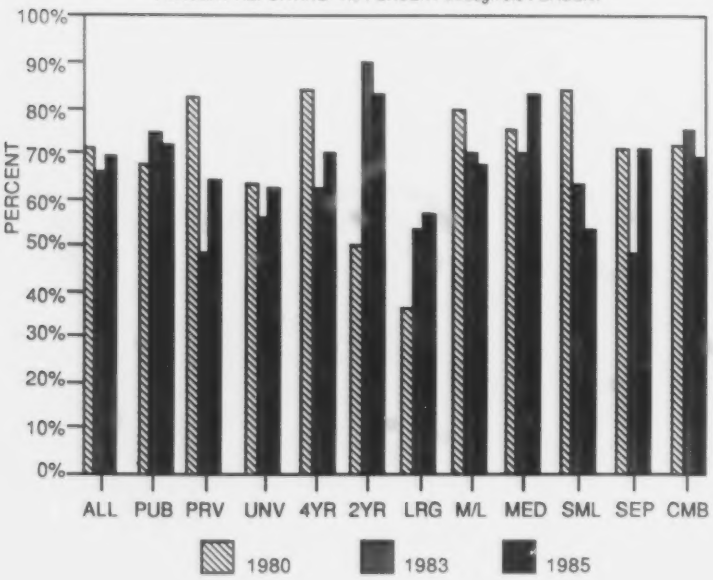
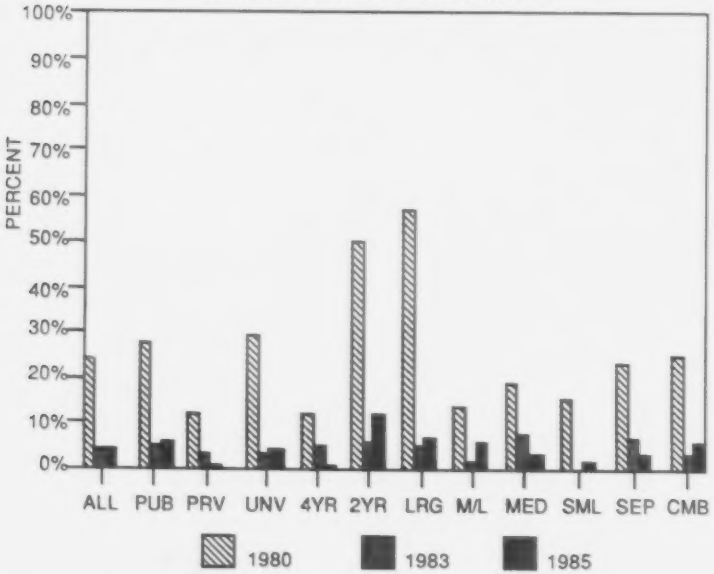


Figure 29

AIS BUDGET AS A PERCENT OF INSTITUTIONAL BUDGET

PERCENT REPORTING 4.0 PERCENT and over



The data in the preceding figures indicate that in 1985 a majority (69 percent) of the responding institutions still reported an AIS budget in the range of 1 to 3.9 percent of their total annual operating budget. The percentage in this range for all institutions is down only slightly from the 71 percent reported in 1980, but there were some significant changes which can be best described by looking also at the number of institutions in the categories above and below the "mainstream" category.

The institutional budget for administrative computing is important, and administrators often want to know what percentage that budget is of the institution's annual operating budget. But what the institution is spending is simply process; what the institution gets for its money is result. The result of administrative systems is difficult to measure, but one method is to determine the total cost of administration as a percentage of the institutional annual operating budget. If this percentage is decreasing over time, it could be an indication that the institution is getting a positive return on its administrative information systems investment. There may be justification for short-term increases in this percentage, but if such a trend continues over time, administrators will certainly want to investigate the reasons for this situation.

It is important for each institution to track and graph these costs individually, rather than to examine the costs for a group of institutions, since cost definitions will vary widely and the exercise will only prove again that "economies of scale" apply also to computing.

AIS Budget Distribution by Expenditure Category

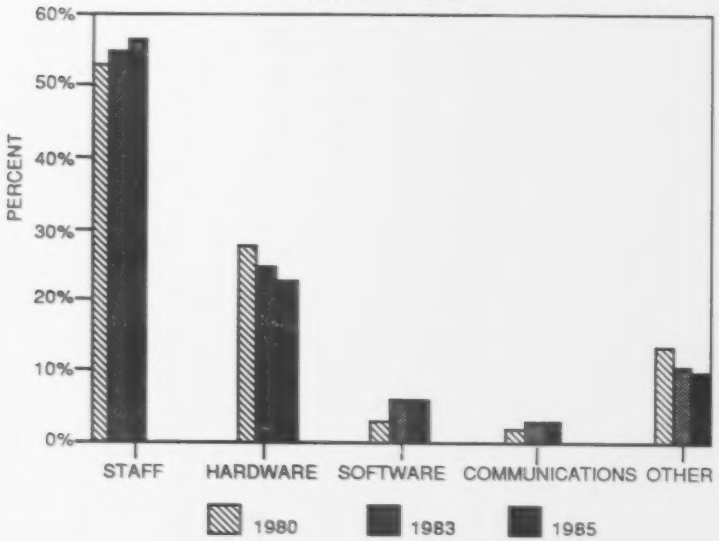
The distribution of costs into the five major categories of staff, hardware, software, communications, and "other" reveals some interesting trends in the use of resources by college and university administrative information systems organizations. A decade ago it was safe to assume that computing hardware would represent about half of any installation's expenditures. By 1980, hardware represented less than one-third of most budgets (28 percent), and by 1985 that percentage had dropped to less than one-fourth (23 percent). During that same time, the share of administrative information systems costs allocated to staff increased from 53 percent to 57 percent, the percentage attributed to software doubled from 3 percent to 6 percent, and communications budgets increased from 2 percent to 3 percent. The "other" category decreased from 14 percent to 10 percent between 1980 and 1985.

These trends are generally consistent for almost all institutional groups. The only minor exception is for private institutions, where the trend for staff and hardware was slightly reversed: in this group the percentage indicated for staff decreased from 55 percent in 1980 to 52 percent in 1985, while the percentage indicated for hardware increased correspondingly from 26 percent in 1980 to 29 percent in 1985. Private institutions also increased their software budgets by a greater percentage than public institutions, perhaps indicating a tendency to purchase more packaged administrative solutions than public institutions.

AIS budget distributions by expenditure category for all three years are displayed for all institutions in Figure 30, and a summary of the distribution of AIS budgets by expenditure category reported in 1985 is shown in Tables 6.0 through 6.8 at the end of this chapter.

Figure 30

AIS BUDGET DISTRIBUTION—BY CATEGORY
ALL INSTITUTIONS



Comparisons of this information are subject to all of the cautions listed earlier in this chapter, but there is a clear continuing trend for computing hardware and other expenditures to represent a smaller percentage of the AIS budget, and for staff, software, and communications to grow in share.

AIS Cost Recovery

Funding for administrative information systems varies widely from institution to institution, ranging from the library model, where computer processing is a free resource, to the economic model, with full cost recovery. As in earlier years, the 1985 CAUSE Member Institution Profile survey asked if AIS costs were fully or partially billed. The same question was asked in 1985 about academic computing costs for comparative purposes, but trend data are only available for administrative information systems costs. (The information about academic billing is included in the Table 9 series at the end of this chapter.)

The data indicate that a significant number of institutions have moved away from billing for administrative information systems costs in the period from 1980 to 1985. In 1980, 60 percent of all responding institutions billed for AIS costs; by 1985, that percentage had decreased to

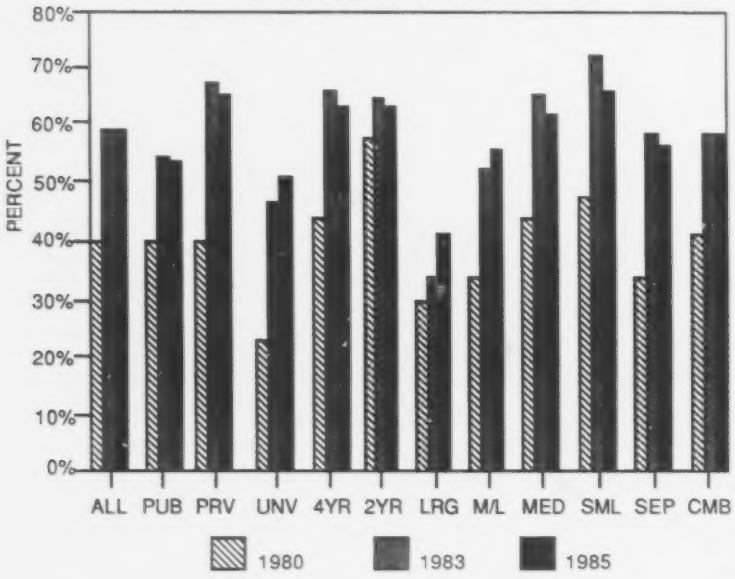
just over 40 percent. Most computing installations do account for utilization, so the trend away from billing is likely due to the fact that institutions are moving toward viewing computing and information technology as a general university/college utility rather than a chargeable service.

The large institutions are still the most likely to bill for administrative information costs, but even in this group the percent of institutions that do not recover costs doubled from 17 percent in 1980 to 33 percent in 1985. As in 1980, small institutions are the least likely to bill for AIS costs.

Figure 31 graphically displays the responses to the AIS cost recovery question, and summaries by institution group for the 1985 responses are shown in Tables 8.0 through 8.8 at the end of this chapter.

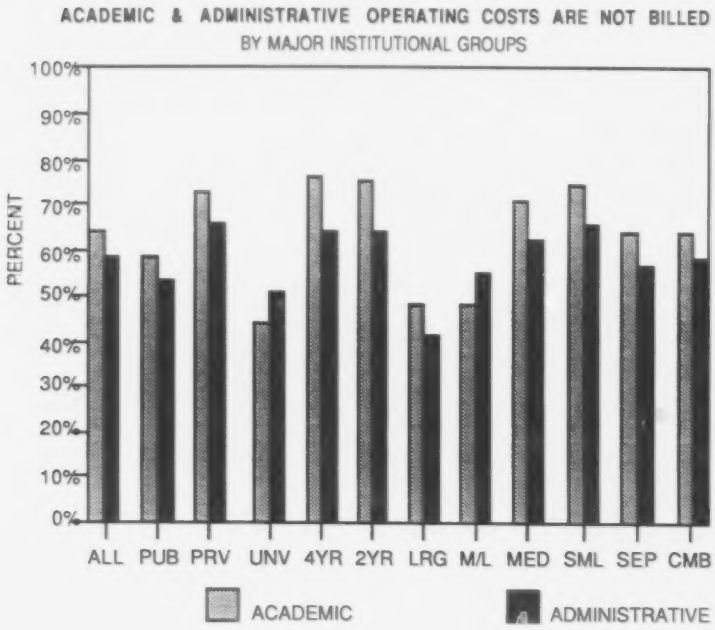
Figure 31

AIS OPERATING COSTS ARE NOT BILLED
BY MAJOR INSTITUTIONAL GROUPS



Academic computing costs are somewhat less likely to be recovered than AIS costs, but the percentages by institutional group follow the same pattern. Figure 32 shows this pattern graphically. Summaries of the answers to the academic computing cost recovery question in the 1985 survey are contained in Tables 9.0 through 9.8 at the end of this chapter.

Figure 32



1985 TABLE 6.0
AVERAGE AIS BUDGET BY FUNCTION
All Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	AVG BUDGET	PCT	AVG BUDGET	PCT	AVG BUDGET	PCT	AVG BUDGET	PCT
SMALL INSTITUTIONS								
STAFF	$409,297	60%	$102,702	50%	$57,760	38%	$121,547	51%
HARDWARE	$102,266	15%	$66,079	32%	$59,632	40%	$68,104	29%
SOFTWARE	$27,810	4%	$16,734	8%	$20,211	13%	$18,302	8%
COMMUNICATIONS	$53,440	8%	$1,774	1%	$3,025	2%	$6,484	3%
OTHER	$92,498	13%	$18,512	9%	$9,563	6%	$23,369	10%
TOTAL BUDGET (AVG)	$685,311	100%	$205,801	100%	$150,191	100%	$237,826	100%
INSTNS IN GROUP	4		34		8		46	
MEDIUM INSTITUTIONS								
STAFF	$403,437	54%	$187,469	48%	$188,196	47%	$258,091	51%
HARDWARE	$181,774	24%	$115,107	29%	$121,462	31%	$138,573	27%
SOFTWARE	$48,815	7%	$31,803	8%	$37,708	10%	$38,955	8%
COMMUNICATIONS	$30,544	4%	$12,991	3%	$8,586	2%	$17,518	3%
OTHER	$79,289	11%	$44,773	11%	$40,751	10%	$54,935	11%
TOTAL BUDGET (AVG)	$743,859	100%	$392,143	100%	$396,703	100%	$508,072	100%
INSTNS IN GROUP	30		37		25		92	
MED-LARGE INSTITUTIONS								
STAFF	$1,071,170	62%	$456,433	52%	$493,516	46%	$534,460	59%
HARDWARE	$344,437	20%	$273,031	31%	$328,696	31%	$322,984	23%
SOFTWARE	$81,527	5%	$61,031	7%	$35,218	3%	$70,452	5%
COMMUNICATIONS	$44,152	3%	$25,611	3%	$17,800	2%	$35,962	3%
OTHER	$176,254	10%	$54,267	6%	$189,363	18%	$144,310	10%
TOTAL BUDGET (AVG)	$1,717,540	100%	$870,373	100%	$1,064,593	100%	$1,408,168	100%
INSTNS IN GROUP	31		14		6		51	
LARGE INSTITUTIONS								
STAFF	$2,077,510	62%	$420,636	44%	$880,181	51%	$1,723,115	60%
HARDWARE	$641,975	19%	$493,325	51%	$450,236	26%	$592,294	21%
SOFTWARE	$180,464	5%	$37,500	4%	$176,578	10%	$170,975	6%
COMMUNICATIONS	$72,241	2%	$10,270	1%	$106,020	6%	$75,650	3%
OTHER	$380,681	11%	$0	0%	$111,084	6%	$300,422	10%
TOTAL BUDGET (AVG)	$3,352,871	100%	$961,731	100%	$1,724,099	100%	$2,862,456	100%
INSTNS IN GROUP	24		2		7		33	
ALL SIZES								
STAFF	$1,087,717	61%	$202,984	50%	$310,638	48%	$579,981	57%
HARDWARE	$358,958	20%	$130,054	32%	$187,770	29%	$233,781	23%
SOFTWARE	$94,766	5%	$30,748	8%	$55,472	9%	$61,536	6%
COMMUNICATIONS	$47,557	3%	$10,575	3%	$23,648	4%	$28,110	3%
OTHER	$194,931	11%	$35,009	9%	$65,414	10%	$105,422	10%
TOTAL BUDGET (AVG)	$1,783,929	100%	$409,370	100%	$642,942	100%	$1,008,830	100%
INSTNS IN GROUP	89		87		46		222	

1985 TABLE 6.1

AVERAGE AIS BUDGET BY FUNCTION

Public Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	AVG BUDGET	PCT	AVG BUDGET	PCT	AVG BUDGET	PCT	AVG BUDGET	PCT
SMALL INSTITUTIONS								
STAFF	$544,280	60%	$426,800	50%	$57,760	38%	$226,809	52%
HARDWARE	$135,522	15%	$303,526	36%	$59,632	40%	$114,667	26%
SOFTWARE	$37,080	4%	$108,647	13%	$20,211	13%	$37,709	9%
COMMUNICATIONS	$71,253	8%	$1,000	0%	$3,025	2%	$18,458	4%
OTHER	$122,066	13%	$7,642	1%	$9,563	6%	$35,230	8%
TOTAL BUDGET (AVG)	$910,201	100%	$847,615	100%	$150,191	100%	$432,873	100%
INSTNS IN GROUP	3		2		8		13	
MEDIUM INSTITUTIONS								
STAFF	$470,988	59%	$187,918	49%	$188,196	47%	$244,648	52%
HARDWARE	$181,986	23%	$111,149	29%	$121,462	31%	$129,609	27%
SOFTWARE	$34,198	4%	$29,478	8%	$37,708	10%	$33,851	7%
COMMUNICATIONS	$22,554	3%	$13,588	4%	$8,586	2%	$13,297	3%
OTHER	$82,293	10%	$43,934	11%	$40,751	10%	$50,280	11%
TOTAL BUDGET (AVG)	$791,999	100%	$386,067	100%	$396,703	100%	$471,685	100%
INSTNS IN GROUP	12		23		25		60	
MED-LARGE INSTITUTIONS								
STAFF	$1,009,231	65%	$426,867	55%	$493,516	46%	$755,302	61%
HARDWARE	$245,559	16%	$213,685	28%	$328,696	31%	$247,570	20%
SOFTWARE	$66,273	4%	$46,714	6%	$35,218	3%	$55,783	4%
COMMUNICATIONS	$45,197	3%	$27,581	4%	$17,800	2%	$35,831	3%
OTHER	$194,417	12%	$58,442	8%	$189,363	18%	$151,607	12%
TOTAL BUDGET (AVG)	$1,560,677	100%	$773,289	100%	$1,064,593	100%	$1,246,093	100%
INSTNS IN GROUP	23		13		6		42	
LARGE INSTITUTIONS								
STAFF	$2,077,510	62%	$420,636	44%	$880,181	51%	$1,723,115	60%
HARDWARE	$641,975	19%	$493,325	51%	$450,236	26%	$592,294	21%
SOFTWARE	$180,464	5%	$37,500	4%	$176,578	10%	$170,975	6%
COMMUNICATIONS	$72,241	2%	$10,270	1%	$106,020	6%	$75,650	3%
OTHER	$380,681	11%	$0	0%	$111,084	6%	$300,422	10%
TOTAL BUDGET (AVG)	$3,352,871	100%	$961,731	100%	$1,724,099	100%	$2,862,456	100%
NSTNS IN GROUP	24		2		7		33	
ALL SIZES								
STAFF	$1,296,085	62%	$289,157	51%	$310,638	48%	$717,655	59%
HARDWARE	$381,378	18%	$173,201	31%	$187,770	29%	$264,938	22%
SOFTWARE	$102,855	5%	$39,439	7%	$55,472	9%	$70,989	6%
COMMUNICATIONS	$52,544	3%	$17,341	3%	$23,648	4%	$34,048	3%
OTHER	$241,317	12%	$44,638	8%	$65,414	10%	$133,488	11%
TOTAL BUDGET (AVG)	$2,074,179	100%	$563,776	100%	$642,942	100%	$1,221,118	100%
INSTNS IN GROUP	62		40		46		148	

1985 TABLE 6.2

AVERAGE AIS BUDGET BY FUNCTION

Private Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	AVG BUDGET	PCT	AVG BUDGET	PCT	AVG BUDGET	PCT	AVG BUDGET	PCT
SMALL INSTITUTIONS								
STAFF	$4,347	41%	$82,446	50%	0	0%	$80,080	50%
HARDWARE	$2,500	23%	$51,238	31%	0	0%	$49,761	31%
SOFTWARE	0	0%	$10,990	7%	0	0%	$10,657	7%
COMMUNICATIONS	0	0%	$1,822	1%	0	0%	$1,767	1%
OTHER	$3,795	36%	$19,191	12%	0	0%	$18,725	12%
TOTAL BUDGET (AVG)	$10,642	100%	$165,687	100%	0	0%	$160,990	100%
INSTNS IN GROUP	1		32		0		33	
MEDIUM INSTITUTIONS								
STAFF	$358,403	50%	$186,731	46%	0	0%	$283,296	49%
HARDWARE	$181,645	26%	$121,610	30%	0	0%	$155,380	27%
SOFTWARE	$58,560	8%	$35,621	9%	0	0%	$48,524	8%
COMMUNICATIONS	$35,870	5%	$12,009	3%	0	0%	$25,431	4%
OTHER	$77,286	11%	$46,151	11%	0	0%	$63,665	11%
TOTAL BUDGET (AVG)	$711,764	100%	$402,122	100%	0	0%	$576,296	100%
INSTNS IN GROUP	18		14		0		32	
MED-LARGE INSTITUTIONS								
STAFF	$1,249,246	58%	$840,784	39%	0	0%	$1,203,861	56%
HARDWARE	$628,714	29%	$1,044,530	49%	0	0%	$674,916	31%
SOFTWARE	$125,382	6%	$247,153	12%	0	0%	$138,912	6%
COMMUNICATIONS	$41,148	2%	$0	0%	0	0%	$36,576	2%
OTHER	$124,038	6%	$0	0%	0	0%	$110,256	5%
TOTAL BUDGET (AVG)	$2,168,528	100%	$2,132,467	100%	0	0%	$2,164,521	100%
INSTNS IN GROUP	8		1		0		9	
LARGE INSTITUTIONS								
STAFF	0	0%	0	0%	0	0%	0	0%
HARDWARE	0	0%	0	0%	0	0%	0	0%
SOFTWARE	0	0%	0	0%	0	0%	0	0%
COMMUNICATIONS	0	0%	0	0%	0	0%	0	0%
OTHER	0	0%	0	0%	0	0%	0	0%
TOTAL BUDGET (AVG)	0	0%	0	0%	0	0%	0	0%
INSTNS IN GROUP	0		0		0		0	
ALL SIZES								
STAFF	$609,243	55%	$129,645	47%	0	0%	$304,633	52%
HARDWARE	$307,475	28%	$93,334	34%	0	0%	$171,466	29%
SOFTWARE	$76,190	7%	$23,351	8%	0	0%	$42,630	7%
COMMUNICATIONS	$36,105	3%	$4,818	2%	0	0%	$16,234	3%
OTHER	$88,416	8%	$26,814	10%	0	0%	$49,290	8%
TOTAL BUDGET (AVG)	$1,117,429	100%	$277,962	100%	0	0%	$584,253	100%
INSTNS IN GROUP	27		47		0		74	

1985 TABLE 6.3
AVERAGE AIS BUDGET BY FUNCTION
All Separate Installations

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	AVG BUDGET	PCT	AVG BUDGET	PCT	AVG BUDGET	PCT	AVG BUDGET	PCT
SMALL INSTITUTIONS								
STAFF	$385,200	73%	$74,195	48%	$66,400	49%	$100,561	54%
HARDWARE	$116,867	22%	$53,387	35%	$45,000	33%	$58,160	32%
SOFTWARE	$11,867	2%	$9,994	6%	$13,500	10%	$10,444	6%
COMMUNICATIONS	$11,867	2%	$1,223	1%	$3,000	2%	$2,286	1%
OTHER	$1,713	0%	$14,988	10%	$6,682	5%	$13,111	7%
TOTAL BUDGET (AVG)	$526,914	100%	$153,787	100%	$134,582	100%	$184,562	100%
INSTNS IN GROUP	2		19		2		23	
MEDIUM INSTITUTIONS								
STAFF	$552,088	55%	$197,988	49%	$160,516	45%	$351,993	53%
HARDWARE	$232,175	23%	$110,331	27%	$104,160	29%	$165,340	25%
SOFTWARE	$70,148	7%	$26,238	6%	$32,396	9%	$48,577	7%
COMMUNICATIONS	$47,960	5%	$11,381	3%	$15,285	4%	$29,622	4%
OTHER	$101,000	10%	$60,143	15%	$44,355	12%	$74,473	11%
TOTAL BUDGET (AVG)	$1,003,371	100%	$406,081	100%	$356,712	100%	$670,005	100%
INSTNS IN GROUP	14		7		9		30	
MED-LARGE INSTITUTIONS								
STAFF	$1,757,867	70%	$651,951	53%	$225,112	36%	$1,317,328	66%
HARDWARE	$373,327	15%	$386,265	31%	$181,150	29%	$353,762	18%
SOFTWARE	$92,491	4%	$64,150	5%	$62,600	10%	$82,306	4%
COMMUNICATIONS	$76,082	3%	$74,500	6%	$0	0%	$66,759	3%
OTHER	$215,336	9%	$51,592	4%	$155,889	25%	$169,814	9%
TOTAL BUDGET (AVG)	$2,515,103	100%	$1,228,458	100%	$624,751	100%	$1,989,969	100%
INSTNS IN GROUP	11		4		2		17	
LARGE INSTITUTIONS								
STAFF	$2,953,316	66%	0	0%	$730,910	47%	$2,477,086	64%
HARDWARE	$835,692	19%	0	0%	$485,000	31%	$760,544	20%
SOFTWARE	$208,049	5%	0	0%	$164,892	11%	$198,801	5%
COMMUNICATIONS	$112,412	2%	0	0%	$36,497	2%	$96,145	2%
OTHER	$389,489	9%	0	0%	$135,108	9%	$334,979	9%
TOTAL BUDGET (AVG)	$4,498,958	100%	0	0%	$1,552,407	100%	$3,867,555	100%
INSTNS IN GROUP	11		0		3		14	
ALL SIZES								
STAFF	$1,587,438	65%	$180,114	51%	$263,775	45%	$832,696	62%
HARDWARE	$441,658	18%	$111,057	31%	$177,796	30%	$273,327	20%
SOFTWARE	$113,457	5%	$21,005	6%	$58,652	10%	$69,999	5%
COMMUNICATIONS	$72,848	3%	$13,364	4%	$15,816	3%	$40,740	3%
OTHER	$212,381	9%	$30,405	9%	$70,604	12%	$120,384	9%
TOTAL BUDGET (AVG)	$2,427,782	100%	$355,945	100%	$586,643	100%	$1,337,146	100%
INSTNS IN GROUP	38		30		16		84	

1985 TABLE 6.4
AVERAGE AIS BUDGET BY FUNCTION
Separate Installations in Public Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	AVG BUDGET	PCT	AVG BUDGET	PCT	AVG BUDGET	PCT	AVG BUDGET	PCT
SMALL INSTITUTIONS								
STAFF	$385,200	73%	$202,000	82%	$66,400	49%	$221,040	70%
HARDWARE	$116,667	22%	$27,600	11%	$45,000	33%	$70,187	22%
SOFTWARE	$11,667	2%	0	0%	$13,500	10%	$10,067	3%
COMMUNICATIONS	$11,667	2%	$2,000	1%	$3,000	2%	$6,267	2%
OTHER	$1,713	0%	$15,000	6%	$6,682	5%	$6,358	2%
TOTAL BUDGET (AVG)	$526,914	100%	$246,600	100%	$134,582	100%	$313,919	100%
INSTNS IN GROUP	2		1		2		5	
MEDIUM INSTITUTIONS								
STAFF	$953,764	64%	$165,458	53%	$160,516	45%	$331,203	56%
HARDWARE	$277,938	19%	$75,327	24%	$104,160	29%	$137,279	23%
SOFTWARE	$41,017	3%	$7,500	2%	$32,396	9%	$30,687	5%
COMMUNICATIONS	$38,506	3%	$7,000	2%	$15,285	4%	$19,077	3%
OTHER	$183,994	12%	$56,500	18%	$44,355	12%	$76,013	13%
TOTAL BUDGET (AVG)	$1,495,219	100%	$311,785	100%	$356,712	100%	$594,259	100%
INSTNS IN GROUP	3		2		9		14	
MED-LARGE INSTITUTIONS								
STAFF	$1,785,254	73%	$651,951	53%	$225,112	36%	$1,306,911	68%
HARDWARE	$299,960	12%	$386,265	31%	$181,150	29%	$306,685	16%
SOFTWARE	$80,840	3%	$64,150	5%	$62,600	10%	$74,388	4%
COMMUNICATIONS	$81,690	3%	$74,500	6%	$0	0%	$69,681	4%
OTHER	$211,770	9%	$51,592	4%	$155,889	25%	$164,740	9%
TOTAL BUDGET (AVG)	$2,459,514	100%	$1,228,458	100%	$624,751	100%	$1,922,405	100%
INSTNS IN GROUP	10		4		2		16	
LARGE INSTITUTIONS								
STAFF	$2,953,316	66%	0	0%	$730,910	47%	$2,477,086	64%
HARDWARE	$835,692	19%	0	0%	$485,000	31%	$760,544	20%
SOFTWARE	$208,049	5%	0	0%	$164,892	11%	$198,801	5%
COMMUNICATIONS	$112,412	2%	0	0%	$36,497	2%	$96,145	2%
OTHER	$389,489	9%	0	0%	$135,108	9%	$334,979	9%
TOTAL BUDGET (AVG)	$4,498,958	100%	0	0%	$1,552,407	100%	$3,867,555	100%
INSTNS IN GROUP	11		0		3		14	
ALL SIZES								
STAFF	$2,075,796	68%	$448,674	54%	$263,775	45%	$1,251,670	65%
HARDWARE	$509,975	17%	$246,187	30%	$177,796	30%	$363,825	19%
SOFTWARE	$124,743	4%	$38,800	5%	$58,652	10%	$90,885	5%
COMMUNICATIONS	$84,319	3%	$44,857	5%	$15,816	3%	$56,313	3%
OTHER	$267,595	9%	$47,767	6%	$70,604	12%	$171,868	9%
TOTAL BUDGET (AVG)	$3,062,428	100%	$826,285	100%	$586,643	100%	$1,934,561	100%
INSTNS IN GROUP	26		7		16		49	

1985 TABLE 6.5

AVERAGE AIS BUDGET BY FUNCTION

Separate Installations in Private Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	AVG BUDGET	PCT	AVG BUDGET	PCT	AVG BUDGET	PCT	AVG BUDGET	PCT
SMALL INSTITUTIONS								
STAFF	0	0%	$67,095	45%	0	0%	$67,095	45%
HARDWARE	0	0%	$54,819	37%	0	0%	$54,819	37%
SOFTWARE	0	0%	$10,549	7%	0	0%	$10,549	7%
COMMUNICATIONS	0	0%	$1,180	1%	0	0%	$1,180	1%
OTHER	0	0%	$14,987	10%	0	0%	$14,987	10%
TOTAL BUDGET (AVG)	0	0%	$148,630	100%	0	0%	$148,630	100%
INSTNS IN GROUP	0		18		0		18	
MEDIUM INSTITUTIONS								
STAFF	$442,540	51%	$211,000	48%	0	0%	$370,184	50%
HARDWARE	$219,694	25%	$124,333	28%	0	0%	$189,894	26%
SOFTWARE	$78,093	9%	$33,733	8%	0	0%	$64,231	9%
COMMUNICATIONS	$50,539	6%	$13,133	3%	0	0%	$38,850	5%
OTHER	$78,365	9%	$61,600	14%	0	0%	$73,126	10%
TOTAL BUDGET (AVG)	$869,231	100%	$443,799	100%	0	0%	$736,285	100%
INSTNS IN GROUP	11		5		0		16	
MED-LARGE INSTITUTIONS								
STAFF	$1,484,000	48%	0	0%	0	0%	$1,484,000	48%
HARDWARE	$1,107,000	36%	0	0%	0	0%	$1,107,000	36%
SOFTWARE	$209,000	7%	0	0%	0	0%	$209,000	7%
COMMUNICATIONS	$20,000	1%	0	0%	0	0%	$20,000	1%
OTHER	$251,000	8%	0	0%	0	0%	$251,000	8%
TOTAL BUDGET (AVG)	$3,071,000	100%	0	0%	0	0%	$3,071,000	100%
INSTNS IN GROUP	1		0		0		1	
LARGE INSTITUTIONS								
STAFF	0	0%	0	0%	0	0%	0	0%
HARDWARE	0	0%	0	0%	0	0%	0	0%
SOFTWARE	0	0%	0	0%	0	0%	0	0%
COMMUNICATIONS	0	0%	0	0%	0	0%	0	0%
OTHER	0	0%	0	0%	0	0%	0	0%
TOTAL BUDGET (AVG)	0	0%	0	0%	0	0%	0	0%
NSTNS IN GROUP	0		0		0		0	
ALL SIZES								
STAFF	$529,328	50%	$98,379	46%	0	0%	$246,133	49%
HARDWARE	$293,636	28%	$69,931	33%	0	0%	$146,630	29%
SOFTWARE	$89,002	8%	$15,589	7%	0	0%	$40,759	8%
COMMUNICATIONS	$47,994	5%	$3,779	2%	0	0%	$18,938	4%
OTHER	$92,751	9%	$25,120	12%	0	0%	$48,308	10%
TOTAL BUDGET (AVG)	$1,052,711	100%	$212,798	100%	0	0%	$500,768	100%
INSTNS IN GROUP	12		23		0		35	

1985 TABLE 6.6
AVERAGE AIS BUDGET BY FUNCTION
All Combined Installations

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	AVG BUDGET	PCT	AVG BUDGET	PCT	AVG BUDGET	PCT	AVG BUDGET	PCT
SMALL INSTITUTIONS								
STAFF	$433,393	51%	$138,811	51%	$54,880	35%	$142,532	49%
HARDWARE	$87,866	10%	$82,155	30%	$64,509	42%	$78,049	27%
SOFTWARE	$43,953	5%	$25,272	9%	$22,448	14%	$26,160	9%
COMMUNICATIONS	$95,213	11%	$2,472	1%	$3,033	2%	$10,683	4%
OTHER	$183,284	22%	$22,976	8%	$10,524	7%	$33,667	12%
TOTAL BUDGET (AVG)	$843,709	100%	$271,686	100%	$155,394	100%	$291,091	100%
INSTNS IN GROUP	2		15		6		23	
MEDIUM INSTITUTIONS								
STAFF	$273,367	53%	$185,015	48%	$203,766	49%	$212,654	49%
HARDWARE	$137,672	27%	$116,221	30%	$131,194	31%	$125,621	9%
SOFTWARE	$30,148	6%	$33,101	9%	$40,696	10%	$34,299	8%
COMMUNICATIONS	$15,304	3%	$13,366	3%	$4,819	1%	$11,660	3%
OTHER	$60,292	12%	$41,187	11%	$38,724	9%	$45,482	11%
TOTAL BUDGET (AVG)	$516,783	100%	$388,890	100%	$419,199	100%	$429,716	100%
INSTNS IN GROUP	16		30		16		62	
MED-LARGE INSTITUTIONS								
STAFF	$693,487	54%	$378,226	52%	$627,718	49%	$593,026	53%
HARDWARE	$328,548	26%	$227,738	31%	$402,469	31%	$307,594	28%
SOFTWARE	$75,496	6%	$59,783	8%	$21,527	2%	$64,526	6%
COMMUNICATIONS	$26,591	2%	$6,055	1%	$26,700	2%	$20,564	2%
OTHER	$154,759	12%	$55,337	8%	$206,100	16%	$131,558	12%
TOTAL BUDGET (AVG)	$1,278,881	100%	$727,139	100%	$1,284,514	100%	$1,117,268	100%
INSTNS IN GROUP	20		10		4		34	
LARGE INSTITUTIONS								
STAFF	$1,336,445	56%	$420,636	44%	$992,135	54%	$1,167,557	55%
HARDWARE	$478,060	20%	$493,325	51%	$424,163	23%	$468,320	22%
SOFTWARE	$157,123	7%	$37,500	4%	$185,343	10%	$150,472	7%
COMMUNICATIONS	$38,250	2%	$10,270	1%	$158,163	9%	$60,549	3%
OTHER	$373,228	16%	$0	0%	$93,066	5%	$274,959	13%
TOTAL BUDGET (AVG)	$2,383,106	100%	$961,731	100%	$1,852,870	100%	$2,121,857	100%
INSTNS IN GROUP	13		2		4		19	
ALL SIZES								
STAFF	$715,376	55%	$215,020	49%	$335,632	50%	$426,154	53%
HARDWARE	$297,338	23%	$140,053	32%	$193,089	29%	$209,710	26%
SOFTWARE	$80,839	6%	$35,876	8%	$53,777	8%	$56,384	7%
COMMUNICATIONS	$28,713	2%	$9,108	2%	$27,825	4%	$20,422	3%
OTHER	$181,929	14%	$37,432	9%	$62,646	9%	$96,314	12%
TOTAL BUDGET (AVG)	$1,304,195	100%	$437,489	100%	$672,969	100%	$808,984	100%
INSTNS IN GROUP	51		57		30		138	

1985 TABLE 6.7

AVERAGE AIS BUDGET BY FUNCTION

Combined Installations in Public Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	AVG BUDGET	PCT	AVG BUDGET	PCT	AVG BUDGET	PCT	AVG BUDGET	PCT
SMALL INSTITUTIONS								
STAFF	$862,439	51%	$651,600	45%	$54,880	35%	$230,415	45%
HARDWARE	$173,232	10%	$579,452	40%	$64,509	42%	$142,467	28%
SOFTWARE	$87,906	5%	$217,294	15%	$22,448	14%	$54,986	11%
COMMUNICATIONS	$190,426	11%	$0	0%	$3,033	2%	$26,078	5%
OTHER	$362,772	22%	$284	0%	$10,524	7%	$53,275	11%
TOTAL BUDGET (AVG)	$1,676,775	100%	$1,448,630	100%	$155,394	100%	$507,221	100%
INSTNS IN GROUP	1		1		6		8	
MEDIUM INSTITUTIONS								
STAFF	$310,063	56%	$190,058	48%	$203,766	49%	$218,305	50%
HARDWARE	$149,976	27%	$114,560	29%	$131,194	31%	$127,275	29%
SOFTWARE	$31,924	6%	$31,572	8%	$40,696	10%	$34,814	8%
COMMUNICATIONS	$17,237	3%	$14,216	4%	$4,819	1%	$11,536	3%
OTHER	$48,393	9%	$42,737	11%	$38,724	9%	$42,448	10%
TOTAL BUDGET (AVG)	$557,593	100%	$393,143	100%	$419,199	100%	$434,380	100%
INSTNS IN GROUP	9		21		16		46	
MED-LARGE INSTITUTIONS								
STAFF	$412,290	47%	$326,830	57%	$627,718	49%	$415,851	50%
HARDWARE	$203,711	23%	$136,983	24%	$402,46	31%	$211,191	25%
SOFTWARE	$55,067	6%	$38,964	7%	$21,527	2%	$44,333	5%
COMMUNICATIONS	$17,126	2%	$6,728	1%	$26,700	2%	$14,999	2%
OTHER	$181,068	21%	$61,486	11%	$206,100	16%	$143,525	17%
TOTAL BUDGET (AVG)	$869,262	100%	$570,991	100%	$1,284,514	100%	$829,899	100%
INSTNS IN GROUP	13		9		4		26	
LARGE INSTITUTIONS								
STAFF	$1,336,445	56%	$420,636	44%	$992,135	54%	$1,167,557	55%
HARDWARE	$478,060	20%	$493,325	51%	$424,163	23%	$468,320	22%
SOFTWARE	$157,123	7%	$37,500	4%	$185,343	10%	$150,472	7%
COMMUNICATIONS	$38,250	2%	$10,270	1%	$158,163	9%	$60,549	3%
OTHER	$373,228	16%	$0	0%	$93,066	5%	$274,959	13%
TOTAL BUDGET (AVG)	$2,383,106	100%	$961,731	100%	$1,852,870	100%	$2,121,857	100%
INSTNS IN GROUP	13		2		4		19	
ALL SIZES								
STAFF	$732,960	54%	$255,320	50%	$335,632	50%	$453,344	52%
HARDWARE	$288,501	21%	$157,719	31%	$193,089	29%	$215,994	25%
SOFTWARE	$87,047	6%	$39,575	8%	$53,777	8%	$61,141	7%
COMMUNICATIONS	$29,595	2%	$11,504	2%	$27,825	4%	$23,028	3%
OTHER	$222,338	16%	$43,974	9%	$62,646	9%	$114,492	13%
TOTAL BUDGET (AVG)	$1,360,441	100%	$508,092	100%	$672,969	100%	$867,999	100%
INSTNS IN GROUP	36		33		30		99	

1985 TABLE 6.8

AVERAGE AIS BUDGET BY FUNCTION

Combined Installations in Private Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	AVG BUDGET	PCT	AVG BUDGET	PCT	AVG BUDGET	PCT	AVG BUDGET	PCT
SMALL INSTITUTIONS								
STAFF	$4,347	41%	$102,184	54%	0	0%	$95,661	54%
HARDWARE	$2,500	23%	$46,634	25%	0	0%	$43,692	25%
SOFTWARE	$0	0%	$11,556	6%	0	0%	$10,786	6%
COMMUNICATIONS	$0	0%	$2,648	1%	0	0%	$2,472	1%
OTHER	$3,795	36%	$24,597	13%	0	0%	$23,210	13%
TOTAL BUDGET (AVG)	$10,642	100%	$187,619	100%	0	0%	$175,821	100%
INSTNS IN GROUP	1		14		0		15	
MEDIUM INSTITUTIONS								
STAFF	$226,187	49%	$173,248	46%	0	0%	$196,409	47%
HARDWARE	$121,854	26%	$120,097	32%	0	0%	$120,866	29%
SOFTWARE	$27,865	6%	$36,670	10%	0	0%	$32,818	8%
COMMUNICATIONS	$12,819	3%	$11,384	3%	0	0%	$12,012	3%
OTHER	$75,590	16%	$37,569	10%	0	0%	$54,203	13%
TOTAL BUDGET (AVG)	$464,315	100%	$378,968	100%	0	0%	$416,308	100%
INSTNS IN GROUP	7		9		0		16	
MED-LARGE INSTITUTIONS								
STAFF	$1,215,709	60%	$840,784	39%	0	0%	$1,168,844	57%
HARDWARE	$560,388	27%	$1,044,530	49%	0	0%	$620,905	30%
SOFTWARE	$113,436	6%	$247,153	12%	0	0%	$130,151	6%
COMMUNICATIONS	$44,169	2%	0	0%	0	0%	$38,648	2%
OTHER	$105,900	5%	0	0%	0	0%	$92,663	5%
TOTAL BUDGET (AVG)	$2,039,602	100%	$2,132,467	100%	0	0%	$2,051,211	100%
INSTNS IN GROUP	7		1		0		8	
LARGE INSTITUTIONS								
STAFF	0	0%	0	0%	0	0%	0	0%
HARDWARE	0	0%	0	0%	0	0%	0	0%
SOFTWARE	0	0%	0	0%	0	0%	0	0%
COMMUNICATIONS	0	0%	0	0%	0	0%	0	0%
OTHER	0	0%	0	0%	0	0%	0	0%
TOTAL BUDGET (AVG)	0	0%	0	0%	0	0%	0	0%
INSTNS IN GROUP	0		0		0		0	
ALL SIZES								
STAFF	$673,175	58%	$159,608	47%	0	0%	$357,133	54%
HARDWARE	$318,546	27%	$115,762	34%	0	0%	$193,756	29%
SOFTWARE	$65,941	6%	$30,790	9%	0	0%	$44,310	7%
COMMUNICATIONS	$26,594	2%	$5,814	2%	0	0%	$13,806	2%
OTHER	$84,948	7%	$28,436	8%	0	0%	$50,172	8%
TOTAL BUDGET (AVG)	$1,169,204	100%	$340,410	100%	0	0%	$659,177	100%
INSTNS IN GROUP	15		24		0		39	

1985 TABLE 7.0

AIS BUDGET AS A PERCENT OF THE INSTITUTIONAL BUDGET

All Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
LESS THAN 1.0%	2	50%	16	50%	0	0%	18	43%
1.0% THRU 1.9%	2	50%	13	41%	2	33%	17	40%
2.0% THRU 2.9%	0	0%	2	6%	1	17%	3	7%
3.0% THRU 3.9%	0	0%	1	3%	2	33%	3	7
4.0% AND ABOVE	0	0%	0	0%	1	17%	1	2%
INSTITUTIONS IN GROUP	4	100%	32	100%	6	100%	42	100%
MEDIUM INSTITUTIONS								
LESS THAN 1.0%	8	32%	2	6%	2	9%	12	15%
1.0% THRU 1.9%	11	44%	21	62%	8	35%	40	49%
2.0% THRU 2.9%	5	20%	8	24%	5	22%	18	22%
3.0% THRU 3.9%	1	4%	2	6%	6	26%	9	11%
4.0% AND ABOVE	0	0%	1	3%	2	9%	3	4%
INSTITUTIONS IN GROUP	25	100%	34	100%	23	100%	82	100%
MED-LARGE INSTITUTIONS								
LESS THAN 1.0%	8	29%	4	29%	0	0%	12	25%
1.0% THRU 1.9%	12	43%	4	29%	1	17%	17	35%
2.0% THRU 2.9%	6	21%	4	29%	4	67%	14	29%
3.0% THRU 3.9%	0	0%	2	14%	0	0%	2	4%
4.0% AND ABOVE	2	7%	0	0%	1	17%	3	6%
INSTITUTIONS IN GROUP	28	100%	14	100%	6	100%	48	100%
LARGE INSTITUTIONS								
LESS THAN 1.0%	10	43%	1	100%	0	0%	11	35%
1.0% THRU 1.9%	9	39%	0	0%	0	0%	9	29%
2.0% THRU 2.9%	3	13%	0	0%	5	71%	8	26%
3.0% THRU 3.9%	0	0%	0	0%	1	14%	1	3%
4.0% AND ABOVE	1	4%	0	0%	1	14%	2	6%
INSTITUTIONS IN GROUP	23	100%	1	100%	7	100%	31	100%
ALL SIZES								
LESS THAN 1.0%	28	35%	23	28%	2	5%	53	26%
1.0% THRU 1.9%	34	43%	38	47%	11	26%	83	41%
2.0% THRU 2.9%	14	18%	14	17%	15	36%	43	21%
3.0% THRU 3.9%	1	1%	5	6%	9	21%	15	7%
4.0% AND ABOVE	3	4%	1	1%	5	12%	9	4%
INSTITUTIONS IN GROUP	80	100%	81	100%	42	100%	203	100%

1985 TABLE 7.1

AIS BUDGET AS A PERCENT OF THE INSTITUTIONAL BUDGET

Public Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
LESS THAN 1.0%	1	33%	1	50%	0	0%	2	18%
1.0% THRU 1.9%	2	67%	0	0%	2	33%	4	36%
2.0% THRU 2.9%	0	0%	1	50%	1	17%	2	18%
3.0% THRU 3.9%	0	0%	0	0%	2	33%	2	18%
4.0% AND ABOVE	0	0%	0	0%	1	17%	1	9%
INSTITUTIONS IN GROUP	3	100%	2	100%	6	100%	11	100%
MEDIUM INSTITUTIONS								
LESS THAN 1.0%	2	18%	2	10%	2	9%	6	11%
1.0% THRU 1.9%	5	45%	10	50%	8	35%	23	43%
2.0% THRU 2.9%	4	36%	6	30%	5	22%	15	28%
3.0% THRU 3.9%	0	0%	1	5%	6	26%	7	13%
4.0% AND ABOVE	0	0%	1	5%	2	9%	3	6%
INSTITUTIONS IN GROUP	11	100%	20	100%	23	100%	54	100%
MED-LARGE INSTITUTIONS								
LESS THAN 1.0%	6	32%	4	31%	0	0%	10	26%
1.0% THRU 1.9%	10	53%	3	23%	1	17%	14	37%
2.0% THRU 2.9%	2	11%	4	31%	4	67%	10	26%
3.0% THRU 3.9%	0	0%	2	15%	0	0%	2	5%
4.0% AND ABOVE	1	5%	0	0%	1	17%	2	5%
INSTITUTIONS IN GROUP	19	100%	13	100%	6	100%	38	100%
LARGE INSTITUTIONS								
LESS THAN 1.0%	10	43%	1	100%	0	0%	11	35%
1.0% THRU 1.9%	9	39%	0	0%	0	0%	9	29%
2.0% THRU 2.9%	3	13%	0	0%	5	71%	8	26%
3.0% THRU 3.9%	0	0%	0	0%	1	14%	1	3%
4.0% AND ABOVE	1	4%	0	0%	1	14%	2	6%
INSTITUTIONS IN GROUP	23	100%	1	100%	7	100%	31	100%
ALL SIZES								
LESS THAN 1.0%	19	34%	8	22%	2	5%	29	22%
1.0% THRU 1.9%	26	46%	13	36%	11	26%	50	37%
2.0% THRU 2.9%	9	16%	11	31%	15	36%	35	26%
3.0% THRU 3.9%	0	0%	3	8%	9	21%	12	9%
4.0% AND ABOVE	2	4%	1	3%	5	12%	8	6%
INSTITUTIONS IN GROUP	56	100%	36	100%	42	100%	134	100%

1985 TABLE 7.2

AIS BUDGET AS A PERCENT OF THE INSTITUTIONAL BUDGET

Private Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
LESS THAN 1.0%	1	100%	15	50%	0	0%	16	52%
1.0% THRU 1.9%	0	0%	13	43%	0	0%	13	42%
2.0% THRU 2.9%	0	0%	1	3%	0	0%	1	3%
3.0% THRU 3.9%	0	0%	1	3%	0	0%	1	3%
4.0% AND ABOVE	0	0%	0	0%	0	0%	0	0%
INSTITUTIONS IN GROUP	1	100%	30	100%	0	0%	31	100%
MEDIUM INSTITUTIONS								
LESS THAN 1.0%	6	43%	0	0%	0	0%	6	21%
1.0% THRU 1.9%	6	43%	11	79%	11	79%	17	61%
2.0% THRU 2.9%	1	7%	2	14%	2	14%	3	11%
3.0% THRU 3.9%	1	7%	1	7%	1	7%	2	7%
4.0% AND ABOVE	0	0%	0	0%	0	0%	0	0%
INSTITUTIONS IN GROUP	14	100%	14	100%	14	100%	28	100%
MED-LARGE INSTITUTIONS								
LESS THAN 1.0%	2	22%	0	0%	0	0%	2	20%
1.0% THRU 1.9%	2	22%	1	100%	1	100%	3	30%
2.0% THRU 2.9%	4	44%	0	0%	0	0%	4	40%
3.0% THRU 3.9%	0	0%	0	0%	0	0%	0	0%
4.0% AND ABOVE	1	11%	0	0%	0	0%	1	10%
INSTITUTIONS IN GROUP	9	100%	1	100%	1	100%	10	100%
LARGE INSTITUTIONS								
LESS THAN 1.0%	0	0%	0	0%	0	0%	0	0%
1.0% THRU 1.9%	0	0%	0	0%	0	0%	0	0%
2.0% THRU 2.9%	0	0%	0	0%	0	0%	0	0%
3.0% THRU 3.9%	0	0%	0	0%	0	0%	0	0%
4.0% AND ABOVE	0	0%	0	0%	0	0%	0	0%
I NSTITUTIONS IN GROUP	0	0%	0	0%	0	0%	0	0%
ALL SIZES								
LESS THAN 1.0%	9	38%	15	33%	0	0%	24	35%
1.0% THRU 1.9%	8	33%	25	56%	0	0%	33	48%
2.0% THRU 2.9%	5	21%	3	7%	0	0%	8	12%
3.0% THRU 3.9%	1	4%	2	4%	0	0%	3	4%
4.0% AND ABOVE	1	4%	0	0%	0	0%	1	1%
INSTITUTIONS IN GROUP	24	100%	45	100%	0	0%	69	100%

1985 TABLE 7.3

AIS BUDGET AS A PERCENT OF THE INSTITUTIONAL BUDGET

All Separate Administrative Installations

	UNIVERSITIES NO.	UNIVERSITIES PCT	FOUR-YEAR NO.	FOUR-YEAR PCT	TWO-YEAR NO.	TWO-YEAR PCT	ALL TYPES NO.	ALL TYPES PCT
SMALL INSTITUTIONS								
LESS THAN 1.0%	1	50%	9	50%	0	0%	10	48%
1.0% THRU 1.9%	1	50%	7	39%	0	0%	8	38%
2.0% THRU 2.9%	0	0%	2	11%	0	0%	2	10%
3.0% THRU 3.9%	0	0%	0	0%	1	100%	1	5%
4.0% AND ABOVE	0	0%	0	0%	0	0%	0	0%
INSTITUTIONS IN GROUP	2	100%	18	100%	1	100%	21	100%
MEDIUM INSTITUTIONS								
LESS THAN 1.0%	2	18%	0	0%	0	0%	2	7%
1.0% THRU 1.9%	7	64%	6	86%	4	44%	17	63%
2.0% THRU 2.9%	1	9%	0	0%	2	22%	3	11%
3.0% THRU 3.9%	1	9%	1	14%	3	33%	5	19%
4.0% AND ABOVE	0	0%	0	0%	0	0%	0	0%
INSTITUTIONS IN GROUP	11	100%	7	100%	9	100%	27	100%
MED-LARGE INSTITUTIONS								
LESS THAN 1.0%	2	20%	0	0%	0	0%	2	13%
1.0% THRU 1.9%	7	70%	1	25%	1	50%	9	56%
2.0% THRU 2.9%	0	0%	1	25%	1	50%	2	13%
3.0% THRU 3.9%	0	0%	2	50%	0	0%	2	13%
4.0% AND ABOVE	1	10%	0	0%	0	0%	1	6%
INSTITUTIONS IN GROUP	10	100%	4	100%	2	100%	16	100%
LARGE INSTITUTIONS								
LESS THAN 1.0%	6	55%	0	0%	0	0%	6	43%
1.0% THRU 1.9%	3	27%	0	0%	0	0%	3	21%
2.0% THRU 2.9%	1	9%	0	0%	3	100%	4	29%
3.0% THRU 3.9%	0	0%	0	0%	0	0%	0	0%
4.0% AND ABOVE	1	9%	0	0%	0	0%	1	7%
INSTITUTIONS IN GROUP	11	100%	0	0%	3	100%	14	100%
ALL SIZES								
LESS THAN 1.0%	11	32%	9	31%	0	0%	20	26%
1.0% THRU 1.9%	18	53%	14	48%	5	33%	37	47%
2.0% THRU 2.9%	2	6%	3	10%	6	40%	11	14%
3.0% THRU 3.9%	1	3%	3	10%	4	27%	8	10%
4.0% AND ABOVE	2	6%	0	0%	0	0%	2	3%
INSTITUTIONS IN GROUP	34	100%	29	100%	15	100%	78	100%

1985 TABLE 7.4

AIS BUDGET AS A PERCENT OF THE INSTITUTIONAL BUDGET

Separate Installations in Public Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
LESS THAN 1.0%	1	50%	0	0%	0	0%	1	25%
1.0% THRU 1.9%	1	50%	0	0%	0	0%	1	25%
2.0% THRU 2.9%	0	0%	1	100%	0	0%	1	25%
3.0% THRU 3.9%	0	0%	0	0%	1	100%	1	25%
4.0% AND ABOVE	0	0%	0	0%	0	0%	0	0%
INSTITUTIONS IN GROUP	2	100%	1	100%	1	100%	4	100%
MEDIUM INSTITUTIONS								
LESS THAN 1.0%	0	0%	0	0%	0	0%	0	0%
1.0% THRU 1.9%	2	67%	2	100%	4	44%	8	57%
2.0% THRU 2.9%	1	33%	0	0%	2	22%	3	21%
3.0% THRU 3.9%	0	0%	0	0%	3	33%	3	21%
4.0% AND ABOVE	0	0%	0	0%	0	0%	0	0%
INSTITUTIONS IN GROUP	3	100%	2	100%	9	100%	14	100%
MED-LARGE INSTITUTIONS								
LESS THAN 1.0%	2	22%	0	0%	0	0%	2	13%
1.0% THRU 1.9%	6	67%	1	25%	1	50%	8	53%
2.0% THRU 2.9%	0	0%	1	25%	1	50%	2	13%
3.0% THRU 3.9%	0	0%	2	50%	0	0%	2	13%
4.0% AND ABOVE	1	11%	0	0%	0	0%	1	7%
INSTITUTIONS IN GROUP	9	100%	4	100%	2	100%	15	100%
LARGE INSTITUTIONS								
LESS THAN 1.0%	6	55%	0	0%	0	0%	6	43%
1.0% THRU 1.9%	3	27%	0	0%	0	0%	3	21%
2.0% THRU 2.9%	1	9%	0	0%	3	100%	4	29%
3.0% THRU 3.9%	0	0%	0	0%	0	0%	0	0%
4.0% AND ABOVE	1	9%	0	0%	0	0%	1	7%
INSTITUTIONS IN GROUP	11	100%	0	0%	3	100%	14	100%
ALL SIZES								
LESS THAN 1.0%	9	36%	0	0%	0	0%	9	19%
1.0% THRU 1.9%	12	48%	3	43%	5	33%	20	43%
2.0% THRU 2.9%	2	8%	2	29%	6	40%	10	21%
3.0% THRU 3.9%	0	0%	2	29%	4	27%	6	13%
4.0% AND ABOVE	2	8%	0	0%	0	0%	2	4%
INSTITUTIONS IN GROUP	25	100%	7	100%	15	100%	47	100%

1985 TABLE 7.5

AIS BUDGET AS A PERCENT OF THE INSTITUTIONAL BUDGET

Separate Installations in Private Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
LESS THAN 1.0%	0	0%	9	53%	0	0%	9	53%
1.0% THRU 1.9%	0	0%	7	41%	0	0%	7	41%
2.0% THRU 2.9%	0	0%	1	6%	0	0%	1	6%
3.0% THRU 3.9%	0	0%	0	0%	0	0%	0	0%
4.0% AND ABOVE	0	0%	0	0%	0	0%	0	0%
INSTITUTIONS IN GROUP	0	0%	17	100%	0	0%	17	100%
MEDIUM INSTITUTIONS								
LESS THAN 1.0%	2	25%	0	0%	0	0%	2	15%
1.0% THRU 1.9%	5	63%	4	80%	4	80%	9	69%
2.0% THRU 2.9%	0	0%	0	0%	0	0%	0	0%
3.0% THRU 3.9%	1	13%	1	20%	1	20%	2	15%
4.0% AND ABOVE	0	0%	0	0%	0	0%	0	0%
INSTITUTIONS IN GROUP	8	100%	5	100%	5	100%	13	100%
MED-LARGE INSTITUTIONS								
LESS THAN 1.0%	0	0%	0	0%	0	0%	0	0%
1.0% THRU 1.9%	1	100%	0	0%	0	0%	1	100%
2.0% THRU 2.9%	0	0%	0	0%	0	0%	0	0%
3.0% THRU 3.9%	0	0%	0	0%	0	0%	0	0%
4.0% AND ABOVE	0	0%	0	0%	0	0%	0	0%
INSTITUTIONS IN GROUP	1	100%	0	0%	0	0%	1	100%
LARGE INSTITUTIONS								
LESS THAN 1.0%	0	0%	0	0%	0	0%	0	0%
1.0% THRU 1.9%	0	0%	0	0%	0	0%	0	0%
2.0% THRU 2.9%	0	0%	0	0%	0	0%	0	0%
3.0% THRU 3.9%	0	0%	0	0%	0	0%	0	0%
4.0% AND ABOVE	0	0%	0	0%	0	0%	0	0%
INSTITUTIONS IN GROUP	0	0%	0	0%	0	0%	0	0%
ALL SIZES								
LESS THAN 1.0%	2	22%	9	41%	0	0%	11	35%
1.0% THRU 1.9%	6	67%	11	50%	0	0%	17	55%
2.0% THRU 2.9%	0	0%	1	5%	0	0%	1	3%
3.0% THRU 3.9%	1	11%	1	5%	0	0%	2	6%
4.0% AND ABOVE	0	0%	0	0%	0	0%	0	0%
INSTITUTIONS IN GROUP	9	100%	22	100%	0	0%	31	100%

1985 TABLE 7.6

AIS BUDGET AS A PERCENT OF THE INSTITUTIONAL BUDGET

All Combined Installations

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
LESS THAN 1.0%	1	50%	7	50%	0	0%	8	38%
1.0% THRU 1.9%	1	50%	6	43%	2	40%	9	43%
2.0% THRU 2.9%	0	0%	0	0%	1	20%	1	5%
3.0% THRU 3.9%	0	0%	1	7%	1	20%	2	10%
4.0% AND ABOVE	0	0%	0	0%	1	20%	1	5%
INSTITUTIONS IN GROUP	2	100%	14	100%	5	100%	21	100%
MEDIUM INSTITUTIONS								
LESS THAN 1.0%	6	43%	2	7%	2	14%	10	18%
1.0% THRU 1.9%	4	29%	15	56%	4	29%	23	42%
2.0% THRU 2.9%	4	29%	8	30%	3	21%	15	27%
3.0% THRU 3.9%	0	0%	1	4%	3	21%	4	7%
4.0% AND ABOVE	0	0%	1	4%	2	14%	3	5%
INSTITUTIONS IN GROUP	14	100%	27	100%	14	100%	55	100%
MED-LARGE INSTITUTIONS								
LESS THAN 1.0%	6	33%	4	40%	0	0%	10	31%
1.0% THRU 1.9%	5	28%	3	30%	0	0%	8	25%
2.0% THRU 2.9%	6	33%	3	30%	3	75%	12	38%
3.0% THRU 3.9%	0	0%	0	0%	0	0%	0	0%
4.0% AND ABOVE	1	6%	0	0%	1	25%	2	6%
INSTITUTIONS IN GROUP	18	100%	10	100%	4	100%	32	100%
LARGE INSTITUTIONS								
LESS THAN 1.0%	4	33%	1	100%	0	0%	5	29%
1.0% THRU 1.9%	6	50%	0	0%	0	0%	6	35%
2.0% THRU 2.9%	2	17%	0	0%	2	50%	4	24%
3.0% THRU 3.9%	0	0%	0	0%	1	25%	1	6%
4.0% AND ABOVE	0	0%	0	0%	1	25%	1	6%
INSTITUTIONS IN GROUP	12	100%	1	100%	4	100%	17	100%
ALL SIZES								
LESS THAN 1.0%	17	37%	14	27%	2	7%	33	26%
1.0% THRU 1.9%	16	35%	24	46%	6	22%	46	37%
2.0% THRU 2.9%	12	26%	11	21%	9	33%	32	26%
3.0% THRU 3.9%	0	0%	2	4%	5	19%	7	6%
4.0% AND ABOVE	1	2%	1	2%	5	19%	7	6%
INSTITUTIONS IN GROUP	46	100%	52	100%	27	100%	125	100%

1985 TABLE 7.7

AIS BUDGET AS A PERCENT OF THE INSTITUTIONAL BUDGET

Combined Installations in Public Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
LESS THAN 1.0%	0	0%	1	100%	0	0%	1	14%
1.0% THRU 1.9%	1	100%	0	0%	2	40%	3	43%
2.0% THRU 2.9%	0	0%	0	0%	1	20%	1	14%
3.0% THRU 3.9%	0	0%	0	0%	1	20%	1	14%
4.0% AND ABOVE	0	0%	0	0%	1	20%	1	14%
INSTITUTIONS IN GROUP	1	100%	1	100%	5	100%	7	100%
MEDIUM INSTITUTIONS								
LESS THAN 1.0%	2	25%	2	11%	2	14%	6	15%
1.0% THRU 1.9%	3	38%	8	44%	4	29%	15	38%
2.0% THRU 2.9%	3	38%	6	33%	3	21%	12	30%
3.0% THRU 3.9%	0	0%	1	6%	3	21%	4	10%
4.0% AND ABOVE	0	0%	1	6%	2	14%	3	8%
INSTITUTIONS IN GROUP	8	100%	18	100%	14	100%	40	100%
MED-LARGE INSTITUTIONS								
LESS THAN 1.0%	4	40%	4	44%	0	0%	8	35%
1.0% THRU 1.9%	4	40%	2	22%	0	0%	6	26%
2.0% THRU 2.9%	2	20%	3	33%	3	75%	8	35%
3.0% THRU 3.9%	0	0%	0	0%	0	0%	0	0%
4.0% AND ABOVE	0	0%	0	0%	1	25%	1	4%
INSTITUTIONS IN GROUP	10	100%	9	100%	4	100%	23	100%
LARGE INSTITUTIONS								
LESS THAN 1.0%	4	33%	1	100%	0	0%	5	29%
1.0% THRU 1.9%	6	50%	0	0%	0	0%	6	35%
2.0% THRU 2.9%	2	17%	0	0%	2	50%	4	24%
3.0% THRU 3.9%	0	0%	0	0%	1	25%	1	6%
4.0% AND ABOVE	0	0%	0	0%	1	25%	1	6%
INSTITUTIONS IN GROUP	12	100%	1	100%	4	100%	17	100%
ALL SIZES								
LESS THAN 1.0%	10	32%	8	28%	2	7%	20	23%
1.0% THRU 1.9%	14	45%	10	34%	6	22%	30	34%
2.0% THRU 2.9%	7	23%	9	31%	9	33%	25	29%
3.0% THRU 3.9%	0	0%	1	3%	5	19%	6	7%
4.0% AND ABOVE	0	0%	1	3%	5	19%	6	7%
INSTITUTIONS IN GROUP	31	100%	29	100%	27	100%	87	100%

1985 TABLE 7.8

AIS BUDGET AS A PERCENT OF THE INSTITUTIONAL BUDGET

Combined Installations in Private Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
LESS THAN 1.0%	1	100%	6	46%	0	0%	7	50%
1.0% THRU 1.9%	0	0%	6	46%	0	0%	6	43%
2.0% THRU 2.9%	0	0%	0	0%	0	0%	0	0%
3.0% THRU 3.9%	0	0%	1	8%	0	0%	1	7%
4.0% AND ABOVE	0	0%	0	0%	0	0%	0	0%
INSTITUTIONS IN GROUP	1	100%	13	100%	0	0%	14	100%
MEDIUM INSTITUTIONS								
LESS THAN 1.0%	4	67%	0	0%	0	0%	4	27%
1.0% THRU 1.9%	1	17%	7	78%	7	78%	8	53%
2.0% THRU 2.9%	1	17%	2	22%	2	22%	3	20%
3.0% THRU 3.9%	0	0%	0	0%	0	0%	0	0%
4.0% AND ABOVE	0	0%	0	0%	0	0%	0	0%
INSTITUTIONS IN GROUP	6	100%	9	100%	9	100%	15	100%
MED-LARGE INSTITUTIONS								
LESS THAN 1.0%	2	25%	0	0%	0	0%	2	22%
1.0% THRU 1.9%	1	13%	1	100%	1	100%	2	22%
2.0% THRU 2.9%	4	50%	0	0%	0	0%	4	44%
3.0% THRU 3.9%	0	0%	0	0%	0	0%	0	0%
4.0% AND ABOVE	1	13%	0	0%	0	0%	1	11%
INSTITUTIONS IN GROUP	8	100%	1	100%	1	100%	9	100%
LARGE INSTITUTIONS								
LESS THAN 1.0%	0	0%	0	0%	0	0%	0	0%
1.0% THRU 1.9%	0	0%	0	0%	0	0%	0	0%
2.0% THRU 2.9%	0	0%	0	0%	0	0%	0	0%
3.0% THRU 3.9%	0	0%	0	0%	0	0%	0	0%
4.0% AND ABOVE	0	0%	0	0%	0	0%	0	0%
INSTITUTIONS IN GROUP	0	0%	0	0%	0	0%	0	0%
ALL SIZES								
LESS THAN 1.0%	7	47%	6	26%	0	0%	13	34%
1.0% THRU 1.9%	2	13%	14	61%	0	0%	16	42%
2.0% THRU 2.9%	5	33%	2	9%	0	0%	7	18%
3.0% THRU 3.9%	0	0%	1	4%	0	0%	1	3%
4.0% AND ABOVE	1	7%	0	0%	0	0%	1	3%
INSTITUTIONS IN GROUP	15	100%	23	100%	0	0%	38	100%

1985 TABLE 8.0
AIS OPERATING COST RECOVERY
All Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
COSTS ARE BILLED	4	33%	7	11%	2	13%	13	14%
PARTIALLY BILLED	1	8%	15	24%	2	13%	18	20%
NOT BILLED	7	58%	41	65%	11	73%	59	66%
INSTITUTIONS IN GROUP	12	100%	63	100%	15	100%	90	100%
MEDIUM INSTITUTIONS								
COSTS ARE BILLED	6	13%	10	13%	6	16%	22	14%
PARTIALLY BILLED	8	18%	20	26%	10	27%	38	24%
NOT BILLED	31	69%	47	61%	21	57%	99	62%
INSTITUTIONS IN GROUP	45	100%	77	100%	37	100%	159	100%
MED-LARGE INSTITUTIONS								
COSTS ARE BILLED	11	20%	1	4%	1	13%	13	14%
PARTIALLY BILLED	18	32%	8	31%	1	13%	27	30%
NOT BILLED	27	48%	17	65%	6	75%	50	56%
INSTITUTIONS IN GROUP	56	100%	26	100%	8	100%	90	100%
LARGE INSTITUTIONS								
COSTS ARE BILLED	10	23%	0	0%	3	33%	13	24%
PARTIALLY BILLED	19	44%	0	0%	0	0%	19	35%
NOT BILLED	14	33%	3	100%	6	67%	23	42%
INSTITUTIONS IN GROUP	43	100%	3	100%	9	100%	55	100%
ALL SIZES								
COSTS ARE BILLED	31	20%	18	11%	12	17%	61	15%
PARTIALLY BILLED	46	29%	43	25%	13	19%	102	26%
NOT BILLED	79	51%	108	64%	44	64%	231	59%
INSTITUTIONS IN GROUP	156	100%	169	100%	69	100%	394	100%

1985 TABLE 8.1
AIS OPERATING COST RECOVERY
Public Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
COSTS ARE BILLED	0	0%	2	20%	2	13%	4	14%
PARTIALLY BILLED	1	25%	1	10%	2	13%	4	14%
NOT BILLED	3	75%	7	70%	11	73%	21	72%
INSTITUTIONS IN GROUP	4	100%	10	100%	15	100%	29	100%
MEDIUM INSTITUTIONS								
COSTS ARE BILLED	3	20%	9	19%	6	16%	18	18%
PARTIALLY BILLED	4	27%	13	27%	10	27%	27	27%
NOT BILLED	8	53%	26	54%	21	57%	55	55%
INSTITUTIONS IN GROUP	15	100%	48	100%	37	100%	100	100%
MED-LARGE INSTITUTIONS								
COSTS ARE BILLED	8	20%	1	4%	1	13%	10	14%
PARTIALLY BILLED	14	35%	7	30%	1	13%	22	31%
NOT BILLED	18	45%	15	65%	6	75%	39	55%
INSTITUTIONS IN GROUP	40	100%	23	100%	8	100%	71	100%
LARGE INSTITUTIONS								
COSTS ARE BILLED	10	25%	0	0%	3	33%	13	25%
PARTIALLY BILLED	17	43%	0	0%	0	0%	17	33%
NOT BILLED	13	33%	3	100%	6	67%	22	42%
INSTITUTIONS IN GROUP	40	100%	3	100%	9	100%	52	100%
ALL SIZES								
COSTS ARE BILLED	21	21%	12	14%	12	17%	45	18%
PARTIALLY BILLED	36	36%	21	25%	13	19%	70	28%
NOT BILLED	42	42%	51	61%	44	64%	137	54%
INSTITUTIONS IN GROUP	99	100%	84	100%	69	100%	252	100%

1985 TABLE 8.2

AIS OPERATING COST RECOVERY

Private Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
COSTS ARE BILLED	4	50%	5	9%	0	0%	9	15%
PARTIALLY BILLED	0	0%	14	26%	0	0%	14	23%
NOT BILLED	4	50%	34	64%	0	0%	38	62%
INSTITUTIONS IN GROUP	8	100%	53	100%	0	0%	61	100%
MEDIUM INSTITUTIONS								
COSTS ARE BILLED	3	10%	1	3%	1	3%	4	7%
PARTIALLY BILLED	4	13%	7	24%	7	24%	11	19%
NOT BILLED	23	77%	21	72%	21	72%	44	75%
INSTITUTIONS IN GROUP	30	100%	29	100%	29	100%	59	100%
MED-LARGE INSTITUTIONS								
COSTS ARE BILLED	3	19%	0	0%	0	0%	3	16%
PARTIALLY BILLED	4	25%	1	33%	1	33%	5	26%
NOT BILLED	9	56%	2	67%	2	67%	11	58%
INSTITUTIONS IN GROUP	16	100%	3	100%	3	100%	19	100%
LARGE INSTITUTIONS								
COSTS ARE BILLED	0	0%	0	0%	0	0%	0	0%
PARTIALLY BILLED	2	67%	0	0%	0	0%	2	67%
NOT BILLED	1	33%	0	0%	0	0%	1	33%
INSTITUTIONS IN GROUP	3	100%	0	0%	0	0%	3	100%
ALL SIZES								
COSTS ARE BILLED	10	18%	6	7%	0	0%	16	11%
PARTIALLY BILLED	10	18%	22	26%	0	0%	32	23%
NOT BILLED	37	65%	57	67%	0	0%	94	66%
INSTITUTIONS IN GROUP	57	100%	85	100%	0	0%	142	100%

1985 TABLE 8.3
AIS OPERATING COST RECOVERY
All Separate Installations

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
COSTS ARE BILLED	2	29%	3	11%	0	0%	5	14%
PARTIALLY BILLED	0	0%	8	30%	0	0%	8	22%
NOT BILLED	5	71%	16	59%	3	100%	24	65%
INSTITUTIONS IN GROUP	7	100%	27	100%	3	100%	37	100%
MEDIUM INSTITUTIONS								
COSTS ARE BILLED	2	12%	1	5%	4	31%	7	14%
PARTIALLY BILLED	5	29%	4	19%	2	15%	11	22%
NOT BILLED	10	59%	16	76%	7	54%	33	65%
INSTITUTIONS IN GROUP	17	100%	21	100%	13	100%	51	100%
MED-LARGE INSTITUTIONS								
COSTS ARE BILLED	3	16%	0	0%	0	0%	3	10%
PARTIALLY BILLED	9	47%	2	22%	1	33%	12	39%
NOT BILLED	7	37%	7	78%	2	67%	16	52%
INSTITUTIONS IN GROUP	19	100%	9	100%	3	100%	31	100%
LARGE INSTITUTIONS								
COSTS ARE BILLED	3	19%	0	0%	1	33%	4	21%
PARTIALLY BILLED	9	56%	0	0%	0	0%	9	47%
NOT BILLED	4	25%	0	0%	2	67%	6	32%
INSTITUTIONS IN GROUP	16	100%	0	0%	3	100%	19	100%
ALL SIZES								
COSTS ARE BILLED	10	17%	4	7%	5	23%	19	14%
PARTIALLY BILLED	23	39%	14	25%	3	14%	40	29%
NOT BILLED	26	44%	39	68%	14	64%	79	57%
INSTITUTIONS IN GROUP	59	100%	57	100%	22	100%	138	100%

1985 TABLE 8.4

AIS OPERATING COST RECOVERY

Separate Installations in Public Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
COSTS ARE BILLED	0	0%	0	0%	0	0%	0	0%
PARTIALLY BILLED	0	0%	0	0%	0	0%	0	0%
NOT BILLED	2	100%	4	100%	3	100%	9	100%
INSTITUTIONS IN GROUP	2	100%	4	100%	3	100%	9	100%
MEDIUM INSTITUTIONS								
COSTS ARE BILLED	1	33%	1	9%	4	31%	6	22%
PARTIALLY BILLED	1	33%	2	18%	2	15%	5	19%
NOT BILLED	1	33%	8	73%	7	54%	16	59%
INSTITUTIONS IN GROUP	3	100%	11	100%	13	100%	27	100%
MED-LARGE INSTITUTIONS								
COSTS ARE BILLED	3	19%	0	0%	0	0%	3	12%
PARTIALLY BILLED	7	44%	2	29%	1	33%	10	38%
NOT BILLED	6	38%	5	71%	2	67%	13	50%
INSTITUTIONS IN GROUP	16	100%	7	100%	3	100%	26	100%
LARGE INSTITUTIONS								
COSTS ARE BILLED	3	20%	0	0%	1	33%	4	22%
PARTIALLY BILLED	8	53%	0	0%	0	0%	8	44%
NOT BILLED	4	27%	0	0%	2	67%	6	33%
INSTITUTIONS IN GROUP	15	100%	0	0%	3	100%	18	100%
ALL SIZES								
COSTS ARE BILLED	7	19%	1	5%	5	23%	13	16%
PARTIALLY BILLED	16	44%	4	18%	3	14%	23	29%
NOT BILLED	13	36%	17	77%	14	64%	44	55%
INSTITUTIONS IN GROUP	36	100%	22	100%	22	100%	80	100%

1985 TABLE 8.5

AIS OPERATING COST RECOVERY

Separate Installations in Private Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
COSTS ARE BILLED	2	40%	3	13%	0	0%	5	18%
PARTIALLY BILLED	0	0%	8	35%	0	0%	8	29%
NOT BILLED	3	60%	12	52%	0	0%	15	54%
INSTITUTIONS IN GROUP	5	100%	23	100%	0	0%	28	100%
MEDIUM INSTITUTIONS								
COSTS ARE BILLED	1	7%	0	0%	0	0%	1	4%
PARTIALLY BILLED	4	29%	2	20%	2	20%	6	25%
NOT BILLED	9	64%	8	80%	8	80%	17	71%
INSTITUTIONS IN GROUP	14	100%	10	100%	10	100%	24	100%
MED-LARGE INSTITUTIONS								
COSTS ARE BILLED	0	0%	0	0%	0	0%	0	0%
PARTIALLY BILLED	2	67%	0	0%	0	0%	2	40%
NOT BILLED	1	33%	2	100%	2	100%	3	60%
INSTITUTIONS IN GROUP	3	100%	2	100%	2	100%	5	100%
LARGE INSTITUTIONS								
COSTS ARE BILLED	0	0%	0	0%	0	0%	0	0%
PARTIALLY BILLED	1	100%	0	0%	0	0%	1	100%
NOT BILLED	0	0%	0	0%	0	0%	0	0%
INSTITUTIONS IN GROUP	1	100%	0	0%	0	0%	1	100%
ALL SIZES								
COSTS ARE BILLED	3	13%	3	9%	0	0%	6	10%
PARTIALLY BILLED	7	30%	10	29%	0	0%	17	29%
NOT BILLED	13	57%	22	63%	0	0%	35	60%
INSTITUTIONS IN GROUP	23	100%	35	100%	0	0%	58	100%

1985 TABLE 8.6

AIS OPERATING COST RECOVERY

All Combined Installations

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
COSTS ARE BILLED	2	40%	4	11%	2	17%	8	15%
PARTIALLY BILLED	1	20%	7	19%	2	17%	10	19%
NOT BILLED	2	40%	25	69%	8	67%	35	66%
INSTITUTIONS IN GROUP	5	100%	36	100%	12	100%	53	100%
MEDIUM INSTITUTIONS								
COSTS ARE BILLED	4	14%	9	16%	2	8%	15	14%
PARTIALLY BILLED	3	11%	16	29%	8	33%	27	25%
NOT BILLED	21	75%	31	55%	14	8%	66	61%
INSTITUTIONS IN GROUP	28	100%	56	100%	24	100%	108	100%
MED-LARGE INSTITUTIONS								
COSTS ARE BILLED	8	22%	1	6%	1	20%	10	17%
PARTIALLY BILLED	9	24%	6	35%	0	0%	15	25%
NOT BILLED	20	54%	10	59%	4	80%	34	58%
INSTITUTIONS IN GROUP	37	100%	17	100%	5	100%	59	100%
LARGE INSTITUTIONS								
COSTS ARE BILLED	7	26%	0	0%	2	33%	9	25%
PARTIALLY BILLED	10	37%	0	0%	0	0%	10	28%
NOT BILLED	10	37%	3	100%	4	67%	17	47%
INSTITUTIONS IN GROUP	27	100%	3	100%	6	100%	36	100%
ALL SIZES								
COSTS ARE BILLED	21	22%	14	13%	7	15%	42	16%
PARTIALLY BILLED	23	24%	29	26%	10	21%	62	24%
NOT BILLED	53	55%	69	62%	30	64%	152	59%
INSTITUTIONS IN GROUP	97	100%	112	100%	47	100%	256	100%

1985 TABLE 8.7

AIS OPERATING COST RECOVERY

Combined Installations in Public Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
COSTS ARE BILLED	0	0%	2	33%	2	17%	4	20%
PARTIALLY BILLED	1	50%	1	17%	2	17%	4	20%
NOT BILLED	1	50%	3	50%	8	67%	12	60%
INSTITUTIONS IN GROUP	2	100%	6	100%	12	100%	20	100%
MEDIUM INSTITUTIONS								
COSTS ARE BILLED	2	17%	8	22%	2	8%	12	16%
PARTIALLY BILLED	3	25%	11	30%	8	33%	22	30%
NOT BILLED	7	58%	18	49%	14	58%	39	53%
INSTITUTIONS IN GROUP	12	100%	37	100%	24	100%	73	100%
MED-LARGE INSTITUTIONS								
COSTS ARE BILLED	5	21%	1	6%	1	20%	7	16%
PARTIALLY BILLED	7	29%	5	31%	0	0%	12	27%
NOT BILLED	12	50%	10	63%	4	80%	26	58%
INSTITUTIONS IN GROUP	24	100%	16	100%	5	100%	45	100%
LARGE INSTITUTIONS								
COSTS ARE BILLED	7	28%	0	0%	2	33%	9	26%
PARTIALLY BILLED	9	36%	0	0%	0	0%	9	26%
NOT BILLED	9	36%	3	100%	4	67%	16	47%
INSTITUTIONS IN GROUP	25	100%	3	100%	6	100%	34	100%
ALL SIZES								
COSTS ARE BILLED	14	22%	11	18%	7	15%	32	19%
PARTIALLY BILLED	20	32%	17	27%	10	21%	47	27%
NOT BILLED	29	46%	34	55%	30	64%	93	54%
INSTITUTIONS IN GROUP	63	100%	62	100%	47	100%	172	100%

1985 TABLE 8.8

AIS OPERATING COST RECOVERY

Combined Installations in Private Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
COSTS ARE BILLED	2	67%	2	7%	0	0%	4	12%
PARTIALLY BILLED	0	0%	6	20%	0	0%	6	18%
NOT BILLED	1	33%	22	73%	0	0%	23	70%
INSTITUTIONS IN GROUP	3	100%	30	100%	0	0%	33	100%
MEDIUM INSTITUTIONS								
COSTS ARE BILLED	2	13%	1	5%	1	5%	3	9%
PARTIALLY BILLED	0	0%	5	26%	5	26%	5	14%
NOT BILLED	14	88%	13	68%	13	68%	27	77%
INSTITUTIONS IN GROUP	16	100%	19	100%	19	100%	35	100%
MED-LARGE INSTITUTIONS								
COSTS ARE BILLED	3	23%	0	0%	0	0%	3	21%
PARTIALLY BILLED	2	15%	1	100%	1	100%	3	21%
NOT BILLED	8	62%	0	0%	0	0%	8	57%
INSTITUTIONS IN GROUP	13	100%	1	100%	1	100%	14	100%
LARGE INSTITUTIONS								
COSTS ARE BILLED	0	0%	0	0%	0	0%	0	0%
PARTIALLY BILLED	1	50%	0	0%	0	0%	1	50%
NOT BILLED	1	50%	0	0%	0	0%	1	50%
INSTITUTIONS IN GROUP	2	100%	0	0%	0	0%	2	100%
ALL SIZES								
COSTS ARE BILLED	7	21%	3	6%	0	0%	10	12%
PARTIALLY BILLED	3	9%	12	24%	0	0%	15	18%
NOT BILLED	24	71%	35	70%	0	0%	59	70%
INSTITUTIONS IN GROUP	34	100%	50	100%	0	0%	84	100%

1985 TABLE 9.0

ACADEMIC OPERATING COST RECOVERY

All Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
COSTS ARE BILLED	2	22%	2	4%	1	9%	5	8%
PARTIALLY BILLED	4	44%	6	13%	2	18%	12	18%
NOT BILLED	3	33%	38	83%	8	73%	49	74%
INSTITUTIONS IN GROUP	9	100%	46	100%	11	100%	66	100%
MEDIUM INSTITUTIONS								
COSTS ARE BILLED	4	13%	4	7%	2	8%	10	9%
PARTIALLY BILLED	5	16%	12	21%	6	24%	23	20%
NOT BILLED	23	72%	40	71%	17	68%	80	71%
INSTITUTIONS IN GROUP	32	100%	56	100%	25	100%	113	100%
MED-LARGE INSTITUTIONS								
COSTS ARE BILLED	7	17%	0	0%	0	0%	7	11%
PARTIALLY BILLED	20	49%	4	31%	0	0%	24	39%
NOT BILLED	14	34%	9	69%	7	100%	30	49%
INSTITUTIONS IN GROUP	41	100%	13	100%	7	100%	61	100%
LARGE INSTITUTIONS								
COSTS ARE BILLED	6	25%	0	0%	1	13%	7	20%
PARTIALLY BILLED	10	42%	0	0%	1	13%	11	31%
NOT BILLED	8	33%	3	100%	6	75%	17	49%
INSTITUTIONS IN GROUP	24	100%	3	100%	8	100%	35	100%
ALL SIZES								
COSTS ARE BILLED	19	18%	6	5%	4	8%	29	11%
PARTIALLY BILLED	39	37%	22	19%	9	18%	70	25%
NOT BILLED	48	45%	90	76%	38	75%	176	64%
INSTITUTIONS IN GROUP	106	100%	118	100%	51	100%	275	100%

1985 TABLE 9.1

ACADEMIC OPERATING COST RECOVERY

Public Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
COSTS ARE BILLED	0	0%	0	0%	1	9%	1	4%
PARTIALLY BILLED	3	75%	2	25%	2	18%	7	30%
NOT BILLED	1	25%	6	75%	8	73%	15	65%
INSTITUTIONS IN GROUP	4	100%	8	100%	11	100%	23	100%
MEDIUM INSTITUTIONS								
COSTS ARE BILLED	1	8%	4	11%	2	8%	7	9%
PARTIALLY BILLED	3	23%	9	24%	6	24%	18	24%
NOT BILLED	9	69%	24	65%	17	68%	50	67%
INSTITUTIONS IN GROUP	13	100%	37	100%	25	100%	75	100%
MED-LARGE INSTITUTIONS								
COSTS ARE BILLED	5	16%	0	0%	0	0%	5	10%
PARTIALLY BILLED	17	55%	3	27%	0	0%	20	41%
NOT BILLED	9	29%	8	73%	7	100%	24	49%
INSTITUTIONS IN GROUP	31	100%	11	100%	7	100%	49	100%
LARGE INSTITUTIONS								
COSTS ARE BILLED	5	24%	0	0%	1	13%	6	19%
PARTIALLY BILLED	8	38%	0	0%	1	13%	9	28%
NOT BILLED	8	38%	3	100%	6	75%	17	53%
INSTITUTIONS IN GROUP	21	100%	3	100%	8	100%	32	100%
ALL SIZES								
COSTS ARE BILLED	11	16%	4	7%	4	8%	19	11%
PARTIALLY BILLED	31	45%	14	24%	9	18%	54	30%
NOT BILLED	27	39%	41	69%	38	75%	106	59%
INSTITUTIONS IN GROUP	69	100%	59	100%	51	100%	179	100%

1985 TABLE 9.2

ACADEMIC OPERATING COST RECOVERY

Private Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
COSTS ARE BILLED	2	40%	2	5%	0	0%	4	9%
PARTIALLY BILLED	1	20%	4	11%	0	0%	5	12%
NOT BILLED	2	40%	32	84%	0	0%	34	79%
INSTITUTIONS IN GROUP	5	100%	38	100%	0	0%	43	100%
MEDIUM INSTITUTIONS								
COSTS ARE BILLED	3	16%	0	0%	0	0%	3	8%
PARTIALLY BILLED	2	11%	3	16%	3	16%	5	13%
NOT BILLED	14	74%	16	84%	16	84%	30	79%
INSTITUTIONS IN GROUP	19	100%	19	100%	19	100%	38	100%
MED-LARGE INSTITUTIONS								
COSTS ARE BILLED	2	20%	0	0%	0	0%	2	17%
PARTIALLY BILLED	3	30%	1	50%	1	50%	4	33%
NOT BILLED	5	50%	1	50%	1	50%	6	50%
INSTITUTIONS IN GROUP	10	100%	2	100%	2	100%	12	100%
LARGE INSTITUTIONS								
COSTS ARE BILLED	1	33%	0	0%	0	0%	1	33%
PARTIALLY BILLED	2	67%	0	0%	0	0%	2	67%
NOT BILLED	0	0%	0	0%	0	0%	0	0%
INSTITUTIONS IN GROUP	3	100%	0	0%	0	0%	3	100%
ALL SIZES								
COSTS ARE BILLED	8	22%	2	3%	0	0%	10	10%
PARTIALLY BILLED	8	22%	8	14%	0	0%	16	17%
NOT BILLED	21	57%	49	83%	0	0%	70	73%
INSTITUTIONS IN GROUP	37	100%	59	100%	0	0%	96	100%

1985 TABLE 9.3

ACADEMIC COMPUTING COST RECOVERY

Separate Installations in All Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
COSTS ARE BILLED	0	0%	1	5%	0	0%	1	4%
PARTIALLY BILLED	2	50%	2	10%	1	33%	5	18%
NOT BILLED	2	50%	18	86%	2	67%	22	79%
INSTITUTIONS IN GROUP	4	100%	21	100%	3	100%	28	100%
MEDIUM INSTITUTIONS								
COSTS ARE BILLED	2	20%	0	0%	0	0%	2	6%
PARTIALLY BILLED	2	20%	4	25%	2	29%	8	24%
NOT BILLED	6	60%	12	75%	5	71%	23	70%
INSTITUTIONS IN GROUP	10	100%	16	100%	7	100%	33	100%
MED-LARGE INSTITUTIONS								
COSTS ARE BILLED	1	9%	0	0%	0	0%	1	6%
PARTIALLY BILLED	8	73%	0	0%	0	0%	8	47%
NOT BILLED	2	18%	3	100%	3	100%	8	47%
INSTITUTIONS IN GROUP	11	100%	3	100%	3	100%	17	100%
LARGE INSTITUTIONS								
COSTS ARE BILLED	1	14%	0	0%	0	0%	1	10%
PARTIALLY BILLED	5	71%	0	0%	1	33%	6	60%
NOT BILLED	1	14%	0	0%	2	67%	3	30%
INSTITUTIONS IN GROUP	7	100%	0	0%	3	100%	10	100%
ALL SIZES								
COSTS ARE BILLED	4	13%	1	3%	0	0%	5	6%
PARTIALLY BILLED	17	53%	6	15%	4	25%	27	31%
NOT BILLED	11	34%	33	83%	12	75%	56	64%
INSTITUTIONS IN GROUP	32	100%	40	100%	16	100%	88	100%

1985 TABLE 9.4

ACADEMIC COMPUTING COST RECOVERY

Separate Installations in Public Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
COSTS ARE BILLED	0	0%	0	0%	0	0%	0	0%
PARTIALLY BILLED	2	100%	0	0%	1	33%	3	38%
NOT BILLED	0	0%	3	100%	2	67%	5	63%
INSTITUTIONS IN GROUP	2	100%	3	100%	3	100%	8	100%
MEDIUM INSTITUTIONS								
COSTS ARE BILLED	1	33%	0	0%	0	0%	1	5%
PARTIALLY BILLED	1	33%	4	36%	2	29%	7	33%
NOT BILLED	1	33%	7	64%	5	71%	13	62%
INSTITUTIONS IN GROUP	3	100%	11	100%	7	100%	21	100%
MED-LARGE INSTITUTIONS								
COSTS ARE BILLED	1	10%	0	0%	0	0%	1	7%
PARTIALLY BILLED	8	80%	0	0%	0	0%	8	53%
NOT BILLED	1	10%	2	100%	3	100%	6	40%
INSTITUTIONS IN GROUP	10	100%	2	100%	3	100%	15	100%
LARGE INSTITUTIONS								
COSTS ARE BILLED	1	17%	0	0%	0	0%	1	11%
PARTIALLY BILLED	4	67%	0	0%	1	33%	5	56%
NOT BILLED	1	17%	0	0%	2	67%	3	33%
INSTITUTIONS IN GROUP	6	100%	0	0%	3	100%	9	100%
ALL SIZES								
COSTS ARE BILLED	3	14%	0	0%	0	0%	3	6%
PARTIALLY BILLED	15	71%	4	25%	4	25%	23	43%
NOT BILLED	3	14%	12	75%	12	75%	27	51%
INSTITUTIONS IN GROUP	21	100%	16	100%	16	100%	53	100%

1985 TABLE 9.5

ACADEMIC COMPUTING COST RECOVERY

Separate Installations in Private Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
COSTS ARE BILLED	0	0%	1	6%	0	0%	1	5%
PARTIALLY BILLED	0	0%	2	11%	0	0%	2	10%
NOT BILLED	2	100%	15	83%	0	0%	17	85%
INSTITUTIONS IN GROUP	2	100%	18	100%	0	0%	20	100%
MEDIUM INSTITUTIONS								
COSTS ARE BILLED	1	14%	0	0%	0	0%	1	8%
PARTIALLY BILLED	1	14%	0	0%	0	0%	1	8%
NOT BILLED	5	71%	5	100%	5	100%	10	83%
INSTITUTIONS IN GROUP	7	100%	5	100%	5	100%	12	100%
MED-LARGE INSTITUTIONS								
COSTS ARE BILLED	0	0%	0	0%	0	0%	0	0%
PARTIALLY BILLED	0	0%	0	0%	0	0%	0	0%
NOT BILLED	1	100%	1	100%	1	100%	2	100%
INSTITUTIONS IN GROUP	1	100%	1	100%	1	100%	2	100%
LARGE INSTITUTIONS								
COSTS ARE BILLED	0	0%	0	0%	0	0%	0	0%
PARTIALLY BILLED	1	100%	0	0%	0	0%	1	100%
NOT BILLED	0	0%	0	0%	0	0%	0	0%
INSTITUTIONS IN GROUP	1	100%	0	0%	0	0%	1	100%
ALL SIZES								
COSTS ARE BILLED	1	9%	1	4%	0	0%	2	6%
PARTIALLY BILLED	2	18%	2	8%	0	0%	4	11%
NOT BILLED	8	73%	21	88%	0	0%	29	83%
INSTITUTIONS IN GROUP	11	100%	24	100%	0	0%	35	100%

1985 TABLE 9.6

ACADEMIC COMPUTING COST RECOVERY

Combined Installations in All Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
COSTS ARE BILLED	2	40%	1	4%	1	13%	4	11%
PARTIALLY BILLED	2	40%	4	16%	1	13%	7	18%
NOT BILLED	1	20%	20	80%	6	75%	27	71%
INSTITUTIONS IN GROUP	5	100%	25	100%	8	100%	38	100%
MEDIUM INSTITUTIONS								
COSTS ARE BILLED	2	9%	4	10%	2	11%	8	10%
PARTIALLY BILLED	3	14%	8	20%	4	22%	15	19%
NOT BILLED	17	77%	28	70%	12	67%	57	71%
INSTITUTIONS IN GROUP	22	100%	40	100%	18	100%	80	100%
MED-LARGE INSTITUTIONS								
COSTS ARE BILLED	6	20%	0	0%	0	0%	6	14%
PARTIALLY BILLED	12	40%	4	40%	0	0%	16	36%
NOT BILLED	12	40%	6	60%	4	100%	22	50%
INSTITUTIONS IN GROUP	30	100%	10	100%	4	100%	44	100%
LARGE INSTITUTIONS								
COSTS ARE BILLED	5	29%	0	0%	1	20%	6	24%
PARTIALLY BILLED	5	29%	0	0%	0	0%	5	20%
NOT BILLED	7	41%	3	100%	4	80%	14	56%
INSTITUTIONS IN GROUP	17	100%	3	100%	5	100%	25	100%
ALL SIZES								
COSTS ARE BILLED	15	20%	5	6%	4	11%	24	13%
PARTIALLY BILLED	22	30%	16	21%	5	14%	43	23%
NOT BILLED	37	50%	57	73%	26	74%	120	64%
INSTITUTIONS IN GROUP	74	100%	78	100%	35	100%	187	100%

1985 TABLE 9.7

ACADEMIC COMPUTING COST RECOVERY

Combined Installations in Public Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
COSTS ARE BILLED	0	0%	0	0%	1	13%	1	7%
PARTIALLY BILLED	1	50%	2	40%	1	13%	4	27%
NOT BILLED	1	50%	3	60%	6	75%	10	67%
INSTITUTIONS IN GROUP	2	100%	5	100%	8	100%	15	100%
MEDIUM INSTITUTIONS								
COSTS ARE BILLED	0	0%	4	15%	2	11%	6	11%
PARTIALLY BILLED	2	20%	5	19%	4	22%	11	20%
NOT BILLED	8	80%	17	65%	12	67%	37	69%
INSTITUTIONS IN GROUP	10	100%	26	100%	18	100%	54	100%
LARGE INSTITUTIONS								
COSTS ARE BILLED	4	19%	0	0%	0	0%	4	12%
PARTIALLY BILLED	9	43%	3	33%	0	0%	12	35%
NOT BILLED	8	38%	6	67%	4	100%	18	53%
INSTITUTIONS IN GROUP	21	100%	9	100%	4	100%	34	100%
LARGE INSTITUTIONS								
COSTS ARE BILLED	4	27%	0	0%	1	20%	5	22%
PARTIALLY BILLED	4	27%	0	0%	0	0%	4	17%
NOT BILLED	7	47%	3	100%	4	80%	14	61%
INSTITUTIONS IN GROUP	15	100%	3	100%	5	100%	23	100%
ALL SIZES								
COSTS ARE BILLED	8	17%	4	9%	4	11%	16	13%
PARTIALLY BILLED	16	33%	10	23%	5	14%	31	25%
NOT BILLED	24	50%	29	67%	26	74%	79	63%
INSTITUTIONS IN GROUP	48	100%	43	100%	35	100%	126	100%

1985 TABLE 9.8

ACADEMIC COMPUTING COST RECOVERY

Combined Installations in Private Institutions

	UNIVERSITIES		FOUR-YEAR		TWO-YEAR		ALL TYPES	
	NO.	PCT	NO.	PCT	NO.	PCT	NO.	PCT
SMALL INSTITUTIONS								
COSTS ARE BILLED	2	67%	1	5%	0	0%	3	13%
PARTIALLY BILLED	1	33%	2	10%	0	0%	3	13%
NOT BILLED	0	0%	17	85%	0	0%	17	74%
INSTITUTIONS IN GROUP	3	100%	20	100%	0	0%	23	100%
MEDIUM INSTITUTIONS								
COSTS ARE BILLED	2	17%	0	0%	0	0%	2	8%
PARTIALLY BILLED	1	8%	3	21%	3	21%	4	15%
NOT BILLED	9	75%	11	79%	11	79%	20	77%
INSTITUTIONS IN GROUP	12	100%	14	100%	14	100%	26	100%
MED-LARGE INSTITUTIONS								
COSTS ARE BILLED	2	22%	0	0%	0	0%	2	20%
PARTIALLY BILLED	3	33%	1	100%	1	100%	4	40%
NOT BILLED	4	44%	0	0%	0	0%	4	40%
INSTITUTIONS IN GROUP	9	100%	1	100%	1	100%	10	100%
LARGE INSTITUTIONS								
COSTS ARE BILLED	1	50%	0	0%	0	0%	1	50%
PARTIALLY BILLED	1	50%	0	0%	0	0%	1	50%
NOT BILLED	0	0%	0	0%	0	0%	0	0%
INSTITUTIONS IN GROUP	2	100%	0	0%	0	0%	2	100%
ALL SIZES								
COSTS ARE BILLED	7	27%	1	3%	0	0%	8	13%
PARTIALLY BILLED	6	23%	6	17%	0	0%	12	20%
NOT BILLED	13	50%	28	80%	0	0%	41	67%
INSTITUTIONS IN GROUP	26	100%	35	100%	0	0%	61	100%

CHAPTER FIVE

COMPUTER HARDWARE AND COMMUNICATIONS

The CAUSE Member Institution Profile survey form provided space for each campus to list the manufacturer and model for up to six computers used for administrative information systems processing. Space was also provided for a limited amount of information about campus communications, and some questions on networking were included. The model numbers of the installed computers and the names of specific networks are useful for understanding the information technology environment on a single campus and for selecting comparable information through the CAUSE ASQ service, but the wide variety of responses makes it necessary to discuss this subject at a very general level here.

Computers Reported by Manufacturer

This section provides a brief overview of the brands of computer hardware generally in use in colleges and universities, and notes patterns of change between 1980 and 1985. Since the same question was asked in the same way in all three CAUSE Member Institution Profile surveys, the data about individual computers by manufacturer provide an indication of trends.

Note that the information about computer hardware by manufacturer presented in this chapter does not purport to show "market share" for the companies, and each entry was counted with equal weight for each computer. Therefore, the smallest minicomputer was counted equally with the largest mainframe.

In this analysis, installations reported for eight computer manufacturers are presented for all three survey years. These eight companies accounted for 97 percent of the entries in 1985, leaving only 3 percent of the computers reported from companies in the "other" category. This total in itself reflects an interesting trend: in 1980, the eight companies included in the analyses accounted for only 83 percent of the entries, while 17 percent of the reported computers were from companies in the "other" category. Amdahl and Harris computers, for example, were reported in significant numbers in the 1980 survey, but because of the low number of responses listing them in the later two surveys they are included in the "other" category.

This major decrease in the number of campuses reporting computers from other than the major eight companies indicates a definite trend in institutional choice of computing manufacturers. In times of rapid change, institutions like to be in the mainstream in both computing hardware and computing software. The "mainstream" trend is further supported by the fact that the percentages of computers reported for all eight of the listed companies between 1980 and 1985 either remained

nearly the same or increased, and almost all of the decrease in percentages occurred in the "other" category. Figure 33 shows the distribution of computers by manufacturer for all institutions for 1985, and Figure 34 shows the distributions for 1980, 1983, and 1985 for all institutions.

Figure 33

1985 DISTRIBUTION OF COMPUTERS BY MANUFACTURER

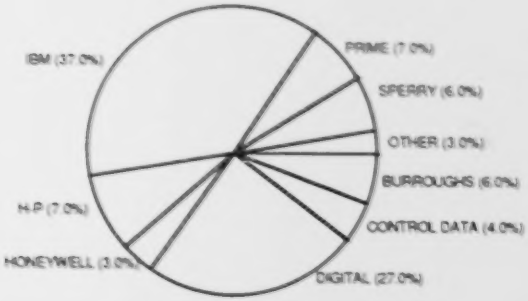
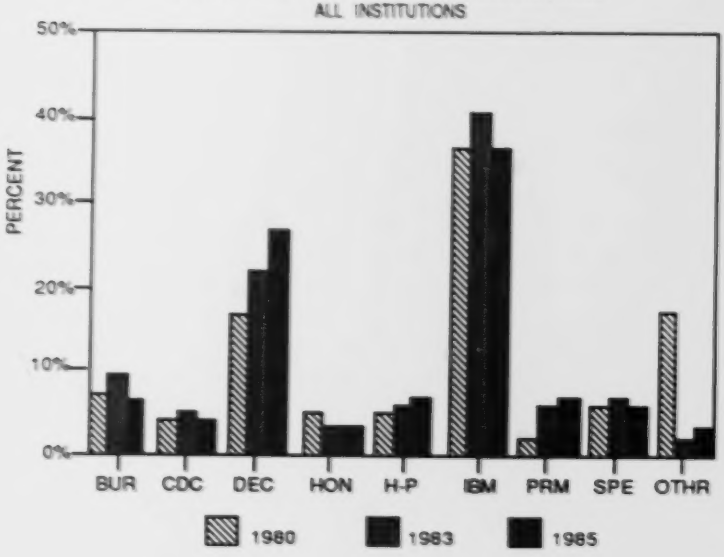


Figure 34

COMPUTERS REPORTED BY MANUFACTURER
ALL INSTITUTIONS



To show to what extent each of the major institutional groups uses the computers from each of the manufacturers, Figures 35 to 42 provide a separate chart for each of the eight major companies. Figure 43 shows a single distribution for the computers from other manufacturers. Observing the percent of computers reported by company for each of the major institutional groups provides information that may be of use to institutions who are considering a computer from a specific company. It should be noted that only general trends can be determined, since no effort was made to ensure that the same institutions responded to each of the three CAUSE Member Institution Profile surveys.

Individual Manufacturers

Burroughs computers were reported most often by four-year colleges and least often by universities. They were reported reasonably consistently across the other institutional groups.

Control Data computers were reported by far more public institutions than private institutions, by more universities and four-year institutions than two-year institutions, by more larger than smaller institutions, and by more combined than separate installations.

Digital computers were reported by more private than public institutions, by more four-year and two-year institutions than universities, by more medium-sized and small institutions than large and medium-large institutions, and by more combined than separate installations.

Honeywell computers were reported evenly by both public and private institutions, by more universities than four-year and two-year institutions, by more medium-large than by other sizes of institutions, and by more combined than separate installations.

Hewlett-Packard computers were reported by slightly more private than public institutions, by more two-year institutions than universities and four-year institutions, by more medium-sized and small than large and medium-large institutions, and by more separate than combined installations.

IBM computers were reported by more public than private institutions, by more universities and two-year institutions than four-year institutions, by more large and medium-large institutions than medium-sized and small institutions, and by slightly more separate than combined installations.

Prime computers were reported by more private than public institutions, by more four-year institutions than universities and two-year institutions, by more small institutions than those in other size categories, and by more separate than combined installations.

Sperry computers were reported evenly by public and private institutions, by more universities than four-year or two-year institutions, by more medium-large institutions than those in other size categories, and by slightly more separate than combined installations.

The "other" category of computer manufacturers included several different companies, and represented only 3 percent of all the computers reported. By major institution group, "other" computers were reported by more public institutions than private, by more universities than four-year institutions and by no two-year institutions, by mostly large institutions

and no small institutions, and by slightly more combined than separate installations.

The following eight companies were named ten or more times by respondents to the 1985 CAUSE Member Institution Profile survey. The abbreviations listed are used for those companies in the following figures.

BUR - Burroughs Corporation
CDC - Control Data Corporation
DEC - Digital Equipment Corporation
HON - Honeywell, Incorporated
H-P - Hewlett-Packard Corporation
IBM - International Business Machines Corporation
PRM - Prime Computer, Incorporated
SPE - Sperry Computer Corporation
OTH - Other

Figure 35

BURROUGHS COMPUTERS REPORTED
BY MAJOR INSTITUTIONAL GROUP

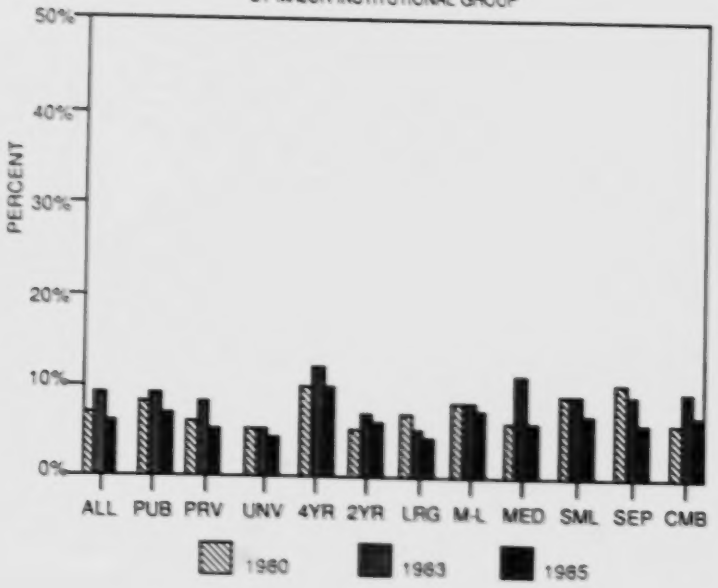


Figure 36

CONTROL DATA CORPORATION COMPUTERS REPORTED
BY MAJOR INSTITUTIONAL GROUP

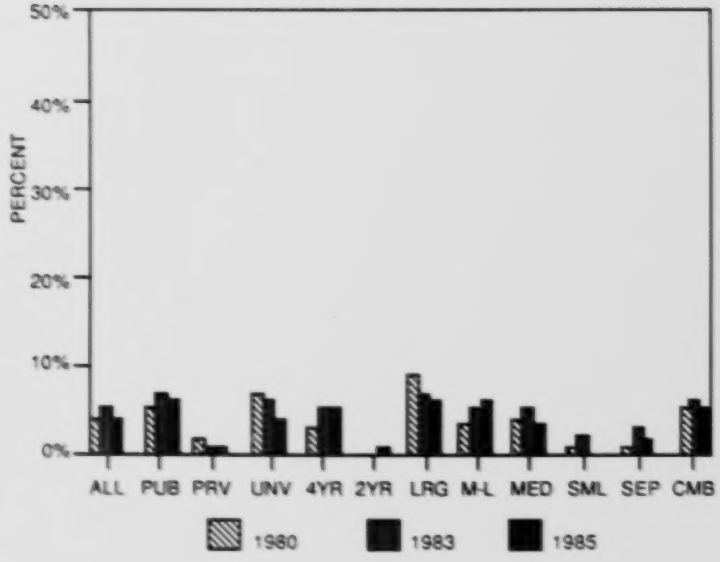


Figure 37

DIGITAL COMPUTERS REPORTED
BY MAJOR INSTITUTIONAL GROUP

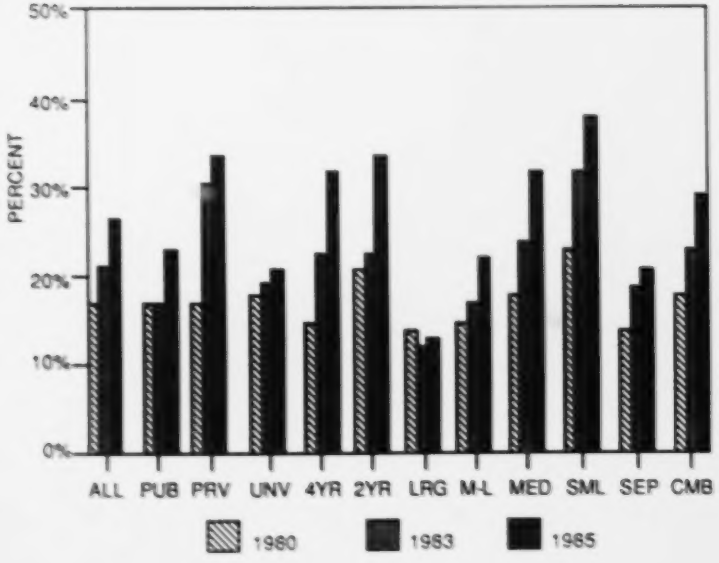


Figure 38

HONEYWELL COMPUTERS REPORTED
BY MAJOR INSTITUTIONAL GROUP

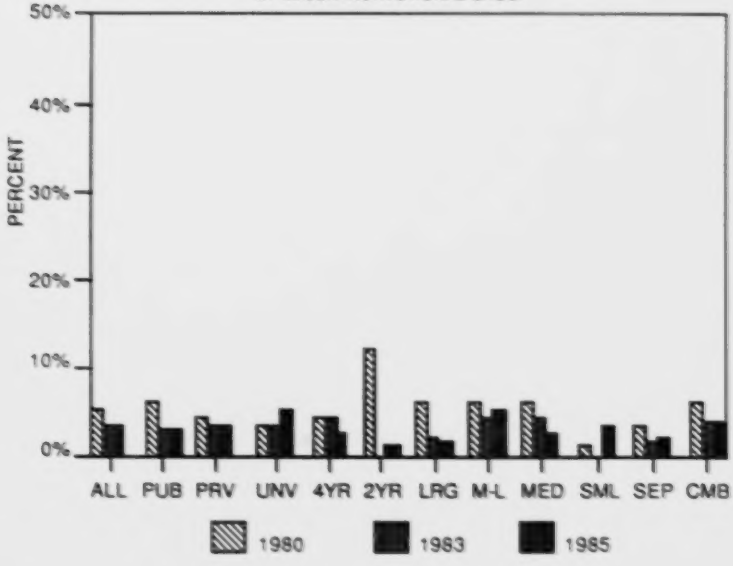


Figure 39

HEWLETT-PACKARD COMPUTERS REPORTED
BY MAJOR INSTITUTIONAL GROUP

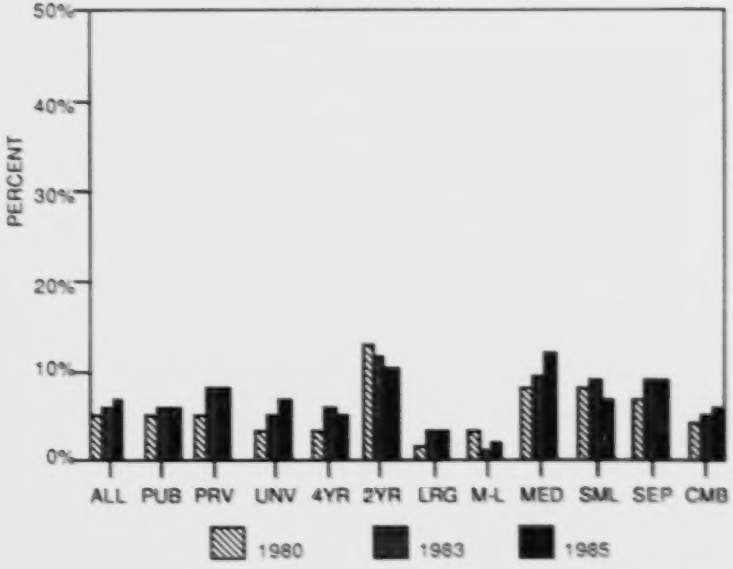


Figure 40

IBM COMPUTERS REPORTED
BY MAJOR INSTITUTIONAL GROUP

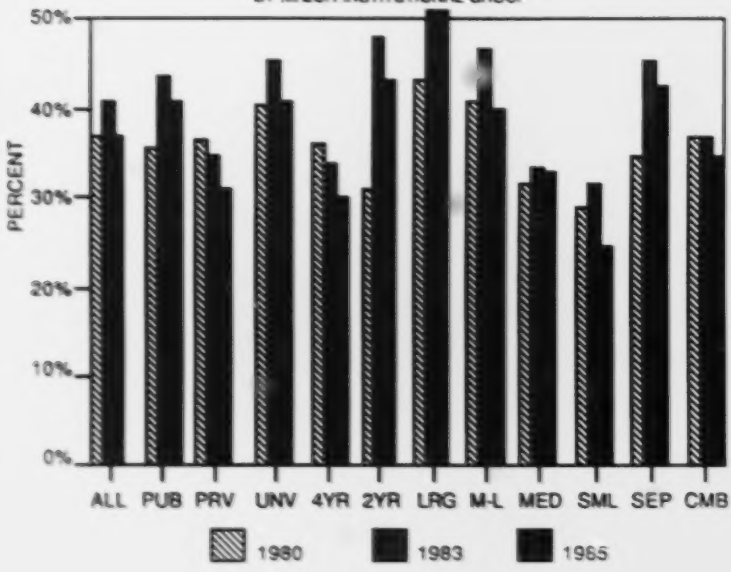


Figure 41

PRIME COMPUTERS REPORTED
BY MAJOR INSTITUTIONAL GROUP

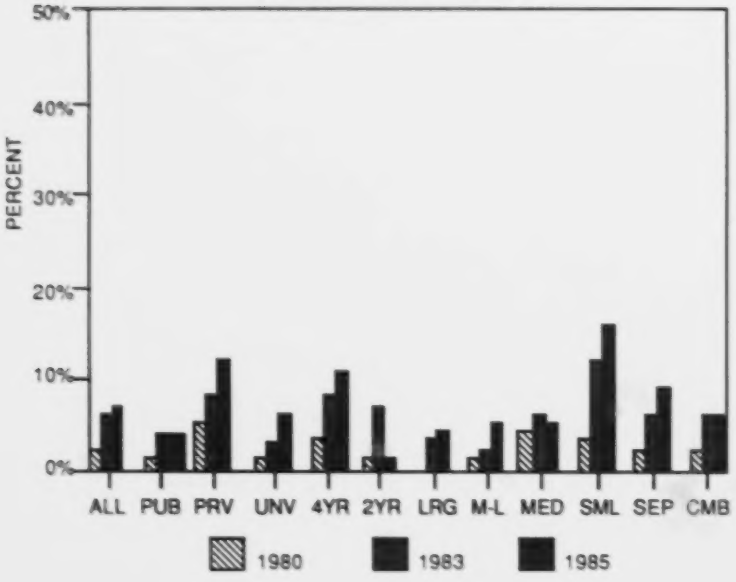


Figure 42

SPERRY COMPUTERS REPORTED
BY MAJOR INSTITUTIONAL GROUP

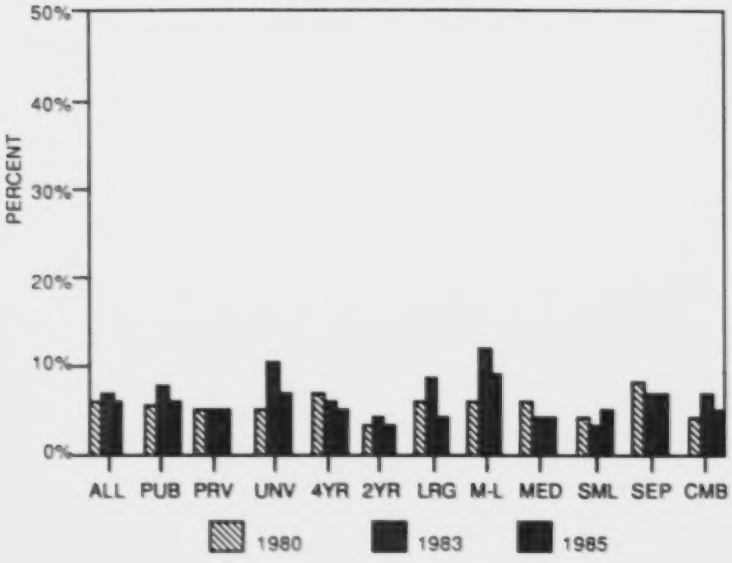
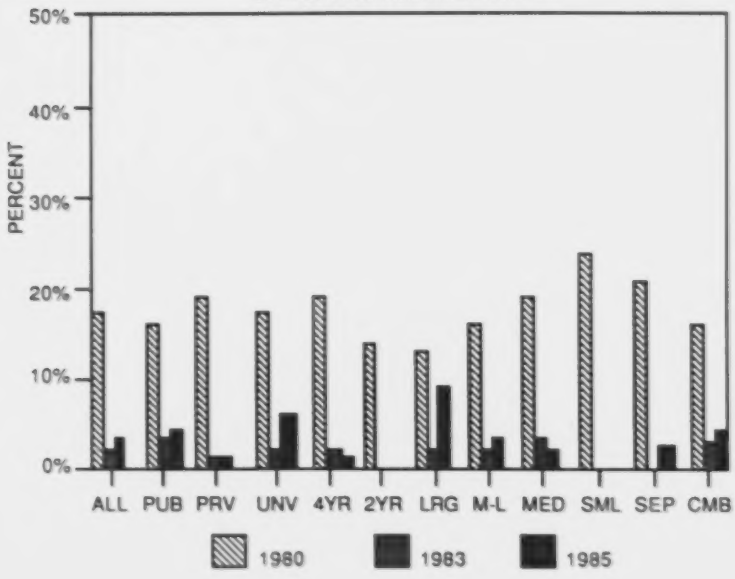


Figure 43

OTHER COMPUTERS REPORTED
BY MAJOR INSTITUTIONAL GROUP



Computers Reported by Institutional Groups

To provide information on which brands of computers are in use by specific types of institutions, the distribution of computers by company for each of the major institutional groups is shown in Figures 44 to 54.

In 1985 public institutions reported a total of 64 percent of their computers from either IBM or Digital, with 41 percent from IBM and 23 percent from Digital. Less than 10 percent were reported from any other individual company. Private institutions reported 65 percent from the same two companies, with 34 percent from Digital and 31 percent from IBM; among other listed companies, only Prime was slightly above the 10 percent mark. Computers from companies in the "other" category were reported at the 4 percent level by public institutions and only 1 percent by private institutions.

IBM and Digital computers combined were reported at the 62 percent level both by the universities and by four-year institutions, with IBM leading in the universities and Digital leading in the four-year institutions. The two-year institutions reported IBM and Digital computers in 78 percent percent of the cases, and no other brand was reported

more than 6 percent of the time. As mentioned earlier, no computers in the "other" category were reported by two-year colleges.

By institutional size, large institutions reported 56 percent IBM computers. The next-closest manufacturer was Digital with 13 percent. Large institutions reported the highest percentage (9 percent) in the "other" category. The split between IBM and Digital changes as institutional size grows smaller, with small institutions reporting 38 percent Digital computers and 25 percent IBM. Small institutions reported 16 percent Prime computers, which was the only company besides IBM and Digital with a reported percentage over the 10 percent level.

Separate computing installations reported 43 percent IBM computers in 1985, followed by 21 percent Digital. Combined installations reported a nearly equal split between these two primary manufacturers (35 percent IBM and 30 percent Digital).

Figure 44

COMPUTERS REPORTED BY MANUFACTURER

PUBLIC INSTITUTIONS

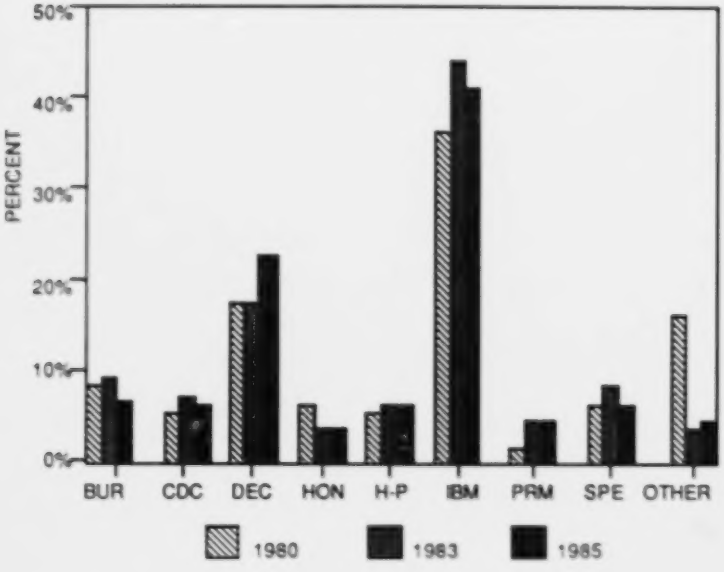


Figure 45

COMPUTERS REPORTED BY MANUFACTURER

PRIVATE INSTITUTIONS

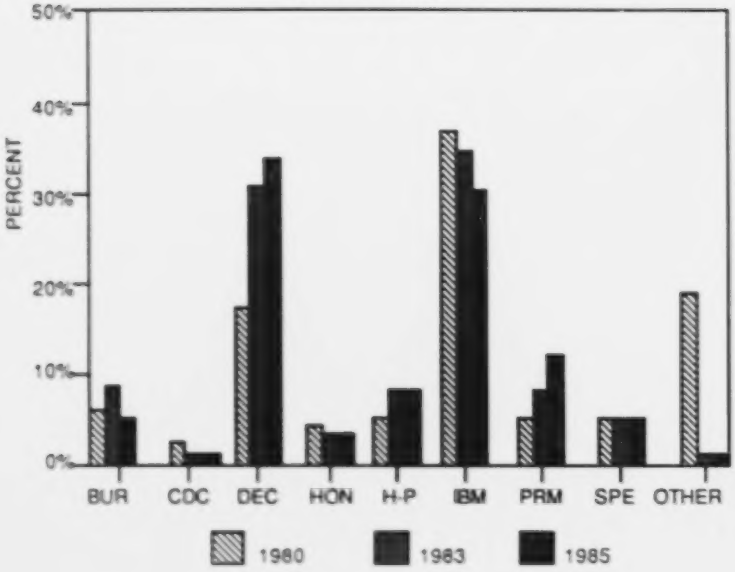


Figure 46

COMPUTERS REPORTED BY MANUFACTURER
UNIVERSITIES

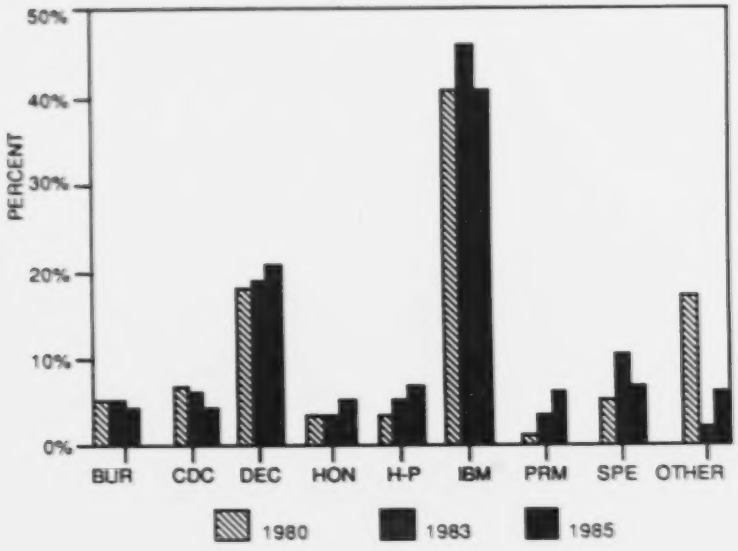


Figure 47

COMPUTERS REPORTED BY MANUFACTURER
FOUR-YEAR INSTITUTIONS

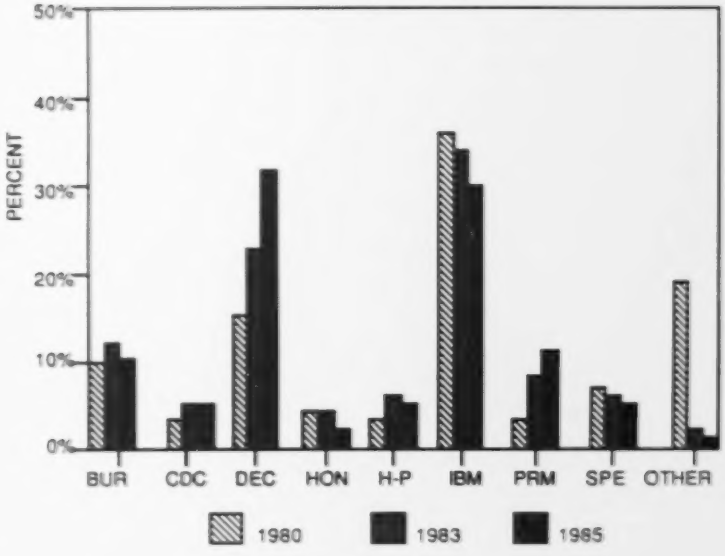


Figure 48

COMPUTERS REPORTED BY MANUFACTURER
TWO-YEAR INSTITUTIONS

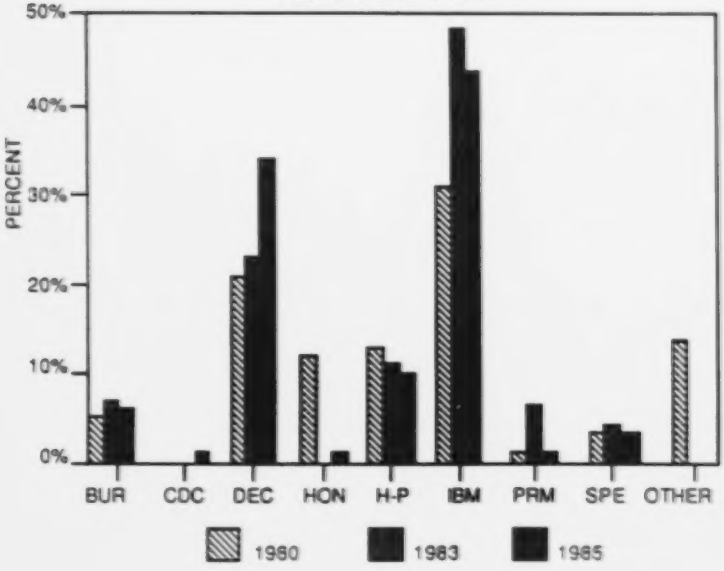


Figure 49

COMPUTERS REPORTED BY MANUFACTURER

LARGE INSTITUTIONS

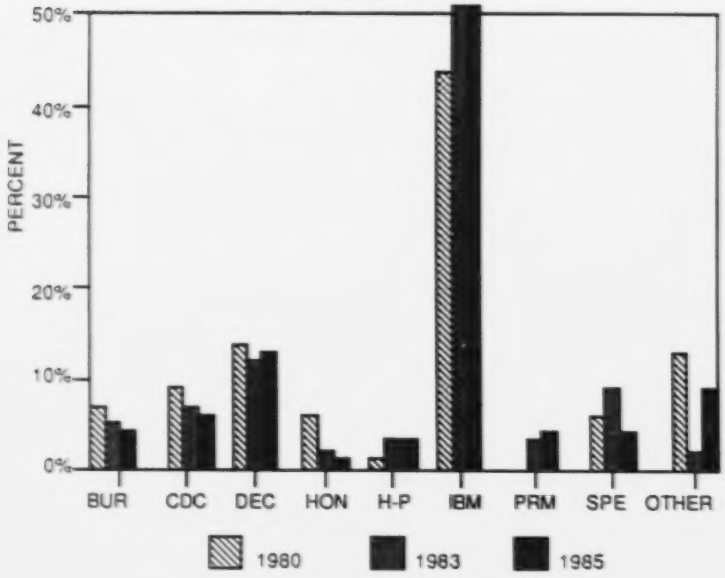


Figure 50

COMPUTERS REPORTED BY MANUFACTURER

MEDIUM-LARGE INSTITUTIONS

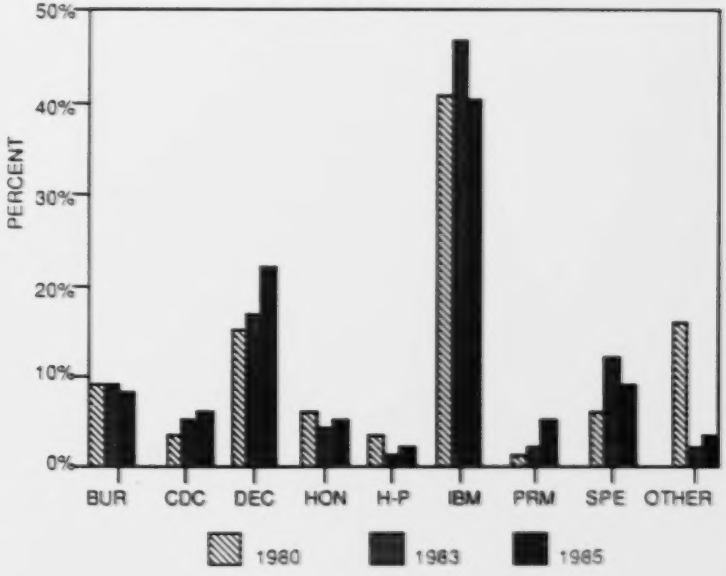


Figure 51

COMPUTERS REPORTED BY MANUFACTURER

MEDIUM-SIZED INSTITUTIONS

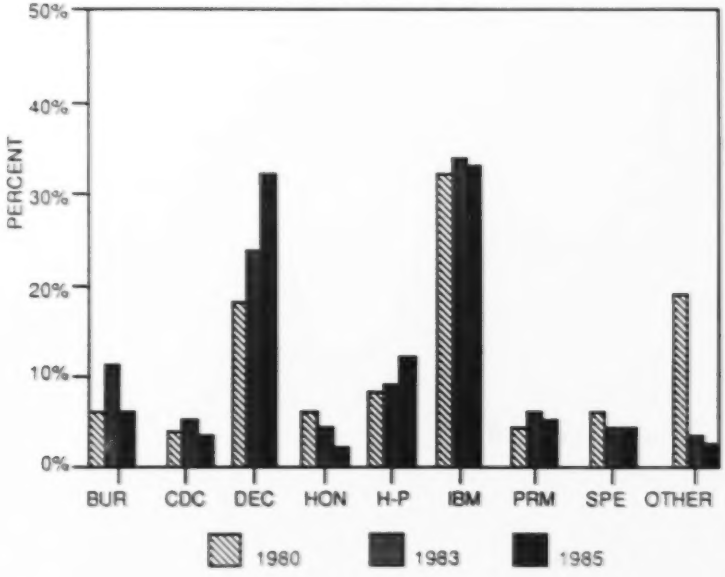


Figure 52

COMPUTERS REPORTED BY MANUFACTURER

SMALL INSTITUTIONS

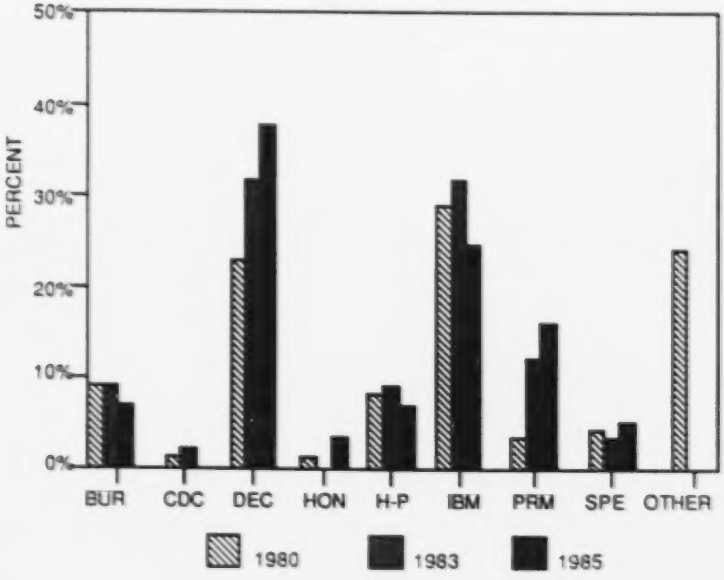


Figure 53

COMPUTERS REPORTED BY MANUFACTURER

SEPARATE INSTALLATIONS

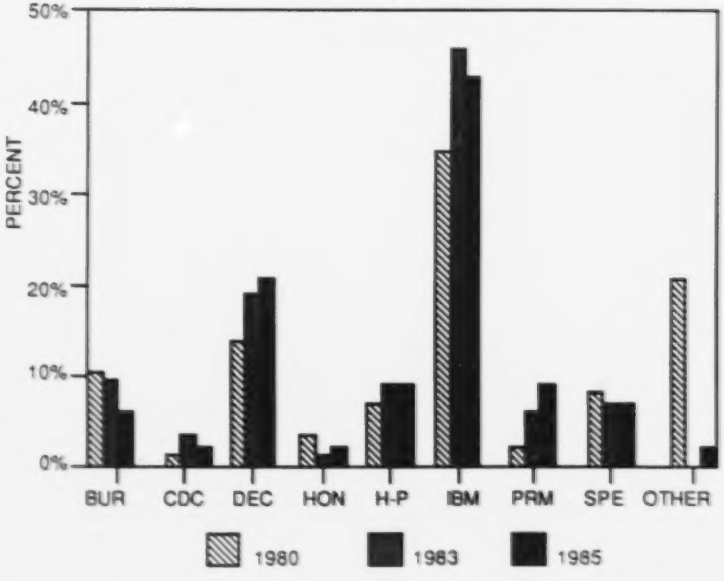
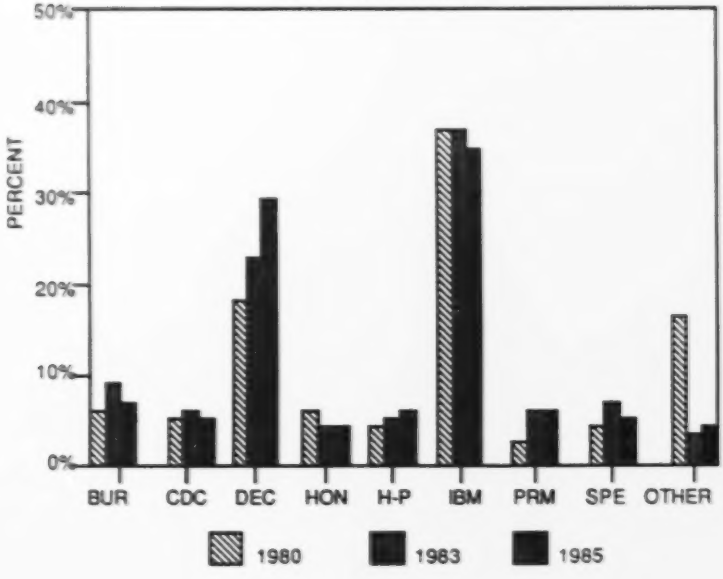


Figure 54

COMPUTERS REPORTED BY MANUFACTURER

COMBINED INSTALLATIONS



Computer Hardware Trends

In addition to the information available through the CAUSE Member Institution Profile surveys, the authors have spent a good deal of time observing the ways colleges and universities are using computing hardware through frequent campus visits and daily telephone contact with various CAUSE member representatives. The following opinions were formed from these observations.

In the chapter on organization a trend toward decentralized computing on campuses was identified. At the very least this means physically locating computing equipment in many user offices on campus. In extreme cases of decentralization, many campus departments operate installations completely independently of any central coordination or control. While this trend can be observed on most campuses of reasonable size, it is also true that at the same time, centralized academic and administrative computing installations are becoming larger and stronger. Most institutions are finding that the introduction of microcomputers on their campuses has created an increased demand for central computing services, particularly after those microcomputers begin communicating.

Three Tiers of Computing

The current computing environment in colleges and universities for both academic and administrative computing can best be described in terms of a three-tiered structure. These three tiers are conceptual, since the functions may be handled differently depending upon institution size, but the first tier in general serves overall institutional processing requirements, the second tier serves multiple users within a department, and the third accommodates personal computing requirements on an individual basis.

Administrative Computing

In the administrative computing area, a centralized mainframe computer is typically used to process and house the institutional data base at the first tier. The need for central control and integrity of the institution's information resource makes this first tier of administrative processing both desirable and necessary. Depending on institutional size and complexity, this first tier may be served by a cluster of minicomputers or even a single minicomputer.

Larger administrative departments like the business office and the registrar may have minicomputers with ten to fifteen terminals to provide dedicated transaction processing capabilities at the second tier. These minicomputers may communicate with the mainframe or first tier computer regularly to report transactions and to receive new starting files from the institutional data base. Smaller administrative departments and academic departments may have mini- and microcomputer-based "local area networks" to support local office automation. These installations may also communicate with the mainframe computer to provide some administrative transaction data electronically, and to query administrative files.

At the third tier, individual administrators may have either word processors or microcomputer workstations that communicate with the computers at other levels in the network. Like faculty and students, some administrators may have communicating microcomputers in their homes, raising interesting considerations about definitions of work schedules and the work arrangement known as telecommuting.

Academic Computing

In the first tier of academic computing, a centralized mainframe computer may be used for large-scale computational problems, usually called "number-crunching" applications. As scientists conducting institutional-based research continue to address problems of increasing scale—such as global weather forecasting, world-wide disease control, and space travel—massive computational and information-processing capabilities are needed if answers are expected in any reasonable time frame.

At the second tier, many academic departments, beginning in the technical and scientific areas, may have minicomputers to provide instructional and research computing capabilities to faculty and students, with each minicomputer serving ten to fifty users simultaneously. These

departmental minicomputers will communicate with the mainframe and with each other within a campus network.

At the third tier, academic departmental offices may have communicating word processors or special-purpose workstations, and many faculty and students may have microcomputers for computing, word processing, and communication with their departmental computer, the campus mainframe, or an external computing service.

Some interesting new analyses may come from these technological changes. For example, when many faculty members and students have communicating microcomputers in their homes, administrative consideration of trade-offs, e.g., the cost of dial-up ports on the computer versus additional campus parking, or food service units, can be considered. When homework assignments can be completed and submitted electronically from a home-based microcomputer, students may make fewer trips to the campus, and eventually require fewer of the physical institutional resources.

The Campus Network

The key to the successful integration of the three tiers of computing is, of course, a campus network. With the recent changes in the telephone environment, there are now hundreds of colleges and universities currently planning or installing new private telephone switches. Many of these systems are being designed to handle both voice and data, but at this time only a few have developed plans for an institution-wide information network to include voice, data, and video capabilities. As technology advances, it can be predicted that even small campuses will have networks that serve as reasonably comprehensive information utilities.

In an article in the July 1985 *CAUSE/EFFECT* magazine entitled "The Network Imperative for Information Technology in Higher Education," Douglas E. Van Houweling, Vice Provost for Information Technology at the University of Michigan, described the network as the focal point of tomorrow's higher education computing environment:

> "I believe that the appropriate information technology environment for the future of higher education will be centered on an institution-wide information network, based on broad access to personal workstations, enhanced by a diverse set of server facilities, and integrated through a coherent software environment. These four elements will together provide the highest function, lowest cost path for growth in the use of information technology."

The 1985 Profile survey form gave respondents three spaces each to list "internal networks" and "external networks" by name. Future surveys will expand on this important instructional use of information technology, and CAUSE will be able to monitor and report on trends in this area in the future. Expenditures for campus communications, including networks, are expected to increase substantially in the next few years.

1985 TABLE 10.0

COMPUTER MANUFACTURERS REPORTED BY INSTITUTIONS

Institutions Categorized by Control and Type

MANUFACTURER	ALL INSTNS NO.	ALL INSTNS PCT	PUBLIC NO.	PUBLIC PCT	PRIVATE NO.	PRIVATE PCT	UNIVERSITY NO.	UNIVERSITY PCT	FOUR-YEAR NO.	FOUR-YEAR PCT	TWO-YEAR NO.	TWO-YEAR PCT
BURROUGHS	28	6%	20	7%	8	5%	8	4%	16	10%	4	6%
CDC	17	4%	16	6%	1	1%	7	4%	9	5%	1	1%
DIGITAL	118	27%	65	23%	53	34%	41	21%	53	32%	24	34%
HONEYWELL	13	3%	8	3%	5	3%	9	5%	3	2%	1	1%
H-P	29	7%	16	6%	13	8%	13	7%	9	5%	7	10%
IBM	161	37%	113	41%	48	31%	80	41%	50	30%	31	44%
PRIME	30	7%	11	4%	19	12%	11	6%	18	11%	1	1%
UNIVAC	24	6%	17	6%	7	5%	14	7%	8	5%	2	3%
OTHER	13	3%	12	4%	1	1%	11	6%	2	1%	0	0%
TOTAL INSTNS	433	100%	278	100%	155	100%	194	100%	168	100%	71	100%

1985 TABLE 10.1

COMPUTER MANUFACTURERS REPORTED BY INSTITUTIONS

Institutions Categorized by Size and Sep vs. Combined Installations

MANUFACTURER	LARGE NO.	LARGE PCT	MED-LARGE NO.	MED-LARGE PCT	MEDIUM NO.	MEDIUM PCT	SMALL NO.	SMALL PCT	SEPARATE NO.	SEPARATE PCT	COMBINED NO.	COMBINED PCT
BURROUGHS	3	4%	9	8%	11	6%	5	7%	8	6%	20	7%
CDC	4	6%	7	6%	6	3%	0	0%	3	2%	14	5%
DIGITAL	9	13%	25	22%	55	32%	29	38%	27	21%	91	30%
HONEYWELL	1	1%	6	5%	4	2%	2	3%	2	2%	11	4%
H-P	2	3%	2	2%	20	12%	5	7%	12	9%	17	6%
IBM	39	56%	46	40%	57	33%	19	25%	56	43%	105	35%
PRIME	3	4%	6	5%	9	5%	12	16%	12	9%	18	6%
UNIVAC	3	4%	10	9%	7	4%	4	5%	9	7%	15	5%
OTHER	6	9%	4	3%	3	2%	0	0%	2	2%	11	4%
TOTAL INSTNS	70	100%	115	100%	72	100%	76	100%	131	100%	302	100%

1985 TABLE 10.2a

COMPUTER MANUFACTURERS REPORTED BY INSTITUTIONS

Percentages By Major Institutional Group

INSTN GROUP	BURROUGHS NO.	BURROUGHS PCT	CTRL DATA NO.	CTRL DATA PCT	DIGITAL NO.	DIGITAL PCT	HONEYWELL NO.	HONEYWELL PCT	HEWLT-PKRD NO.	HEWLT-PKRD PCT
ALL INSTNS	28	20%	17	20%	118	20%	13	11%	29	20%
PUBLIC	20	14%	16	19%	65	11%	8	7%	16	11%
PRIVATE	8	6%	1	1%	53	9%	5	4%	13	9%
UNIV	8	6%	7	8%	41	7%	9	8%	13	9%
4-YEAR	16	11%	9	11%	53	9%	53	46%	9	6%
2-YEAR	4	3%	1	1%	24	4%	1	1%	7	5%
LARGE	3	2%	4	5%	9	2%	1	1%	2	1%
MED-LARGE	9	6%	7	8%	25	4%	6	5%	2	1%
MEDIUM	11	8%	6	7%	55	9%	4	3%	20	14%
SMALL	5	4%	0	0%	29	5%	2	2%	5	3%
SEPARATE	8	6%	3	4%	27	5%	2	2%	12	8%
COMBINED	20	14%	14	16%	91	15%	11	10%	17	12%
TOTAL INSTNS	140	100%	85	100%	580	100%	115	100%	145	100%

1985 TABLE 10.2b

COMPUTER MANUFACTURERS REPORTED BY INSTITUTIONS

Percentages By Major Institutional Group

INSTN GROUP	IBM NO.	IBM PCT	PRIME NO.	PRIME PCT	UNIVAC NO.	UNIVAC PCT	OTHER NO.	OTHER PCT	ALL MFGRS NO.	ALL MFGRS PCT
ALL INSTNS	161	20%	30	20%	24	20%	13	20%	433	20%
PUBLIC	113	14%	11	7%	17	14%	12	18%	278	13%
PRIVATE	48	6%	19	13%	7	6%	1	2%	155	7%
UNIV	80	10%	11	7%	14	12%	11	17%	194	9%
4-YEAR	50	6%	18	12%	8	7%	2	3%	168	8%
2-YEAR	31	4%	1	1%	2	2%	0	0%	71	3%
LARGE	39	5%	3	2%	3	3%	6	9%	70	3%
MED-LARGE	46	6%	6	4%	10	8%	4	6%	115	5%
MEDIUM	57	7%	9	6%	7	6%	3	5%	172	8%
SMALL	19	2%	12	8%	4	3%	0	0%	76	4%
SEPARATE	56	7%	12	8%	9	8%	2	3%	131	6%
COMBINED	105	13%	18	12%	15	13%	11	17%	302	14%
TOTAL INSTNS	805	100%	150	100%	120	100%	65	100%	2,165	100%

CHAPTER SIX

COMPUTER SOFTWARE

A primary objective of CAUSE has been the exchange of information concerning the software systems and programs used for administrative information systems in colleges and universities. In the early years, the CAUSE Exchange Library contained detailed systems documentation and source computer programs. These items were contributed by member institutions and made available through CAUSE to other members at the cost of reproduction. As administrative information processing systems became more complex, CAUSE shifted the emphasis of the Exchange Library from documentation and source computer programs to information about what systems were in use at which member institutions, and broader issues such as strategic planning, management, and organization for information systems. The CAUSE Member Institution Profile data provides a wealth of information on the use of proprietary software as well as which administrative systems have been implemented, and in what manner, at member institutions.

Proprietary Software

One section of the Profile survey requests information about proprietary applications software, data base management systems used for administrative information systems, and proprietary application-support software. While the responses to these questions vary too widely to warrant a great deal of detail in this monograph, individual reports of institutions reporting the use of any specific package can be prepared upon request by the CAUSE National Office through the use of the Administrative Systems Query (ASQ) service described in the Foreword and Chapter 1.

In all the surveys between 1980 and 1985, a total of 452 institutions reported an average of four proprietary software packages each, for a total of 1,807 entries. Six hundred seventy proprietary software packages for specific applications were reported, representing 37 percent of the total; 301 data base management systems used for AIS were reported, representing 17 percent of the total; and 836 support software packages were reported, representing the other 46 percent of all proprietary software packages reported.

Proprietary application-specific software packages from six companies accounted for 59 percent (398) of the entries. Eight percent (52) of the entries in this section were listed simply as application names without a company identified, and the remaining 33 percent (220) were packages from 104 companies that were listed fewer than ten times each. The six most frequently mentioned companies and the number of proprietary application software entries for each are shown below.

Proprietary Application-Specific Software
Companies with ten or more entries

Information Associates	266
Systems & Computer Technology	48
POISE	32
Integral Systems	25
Sigma	17
Management Science of America	10
Sub-total from 6 companies	**398**
Unidentified packages	52
"Other Company" packages	220
Total Packages	**670**

Nine data base management systems accounted for 60 percent (180) of the 301 entries on the profiles, and 60 different systems made up the remaining 40 percent (121 entries) of the data base management systems software entries. The nine most frequently mentioned DBMS and the number of entries for each are shown below.

Proprietary Data Base Management Software
Systems with ten or more entries

IMS	30
IDMS	26
TOTAL	26
IMAGE	23
DMS-II	20
ADABAS	16
INFORMATION	15
DL/1	13
POISE DMS	11
Sub-total	**80**
Other DBMS Entries	121
Total DBMS Entries	**301**

Indicative of the great diversity in proprietary support software, of the 836 such packages listed, 43 percent (358 entries) reported one of eleven packages, leaving 285 different packages, or 57 percent (478 entries) to account for the rest. The eleven most frequently mentioned packages and the number of entries for each are listed below.

Proprietary Application Support Software
Packages with ten or more entries

CICS	130
DATATRIEVE	52
EASYTRIEVE	42
MARK-IV	26
SPSS	22
PANVALET	20
SAS	19
MANTIX	13
FMS	12
DMS	11
FOCUS	11
Sub-total	**358**
"Other" packages	478
Total Packages	**836**

Administrative Applications

Two pages of the 1985 profile survey form listed nearly 160 administrative "systems" in eleven major categories. In 1985 the "mode of processing" was also requested for each of the applications; specifically, members identified whether the application is implemented for batch, on-line, distributed processing, or microcomputer, and whether the system uses a proprietary package. Selected summary information on the number of entries checked is provided here to illustrate trends in administrative applications.

In 1985 alone, over 28,000 administrative computing applications were reported in production by the responding institutions, an average of 62 applications per campus. This overall average represents a 17 percent increase over the 1980 average of 51 applications per campus. The Tables in this chapter provide detailed summaries of the applications reported in eleven major administrative areas as of 1985. To indicate overall trends, Figure 55 below shows the average number of applications in each of the eleven areas as of 1980 and as of 1985.

Average Number of Applications
All Institutions

Mode of Operation	1980	1985
Batch Systems	36	22
On-line Systems	10	25
Combined Systems	6	9
All Systems Types	51	62

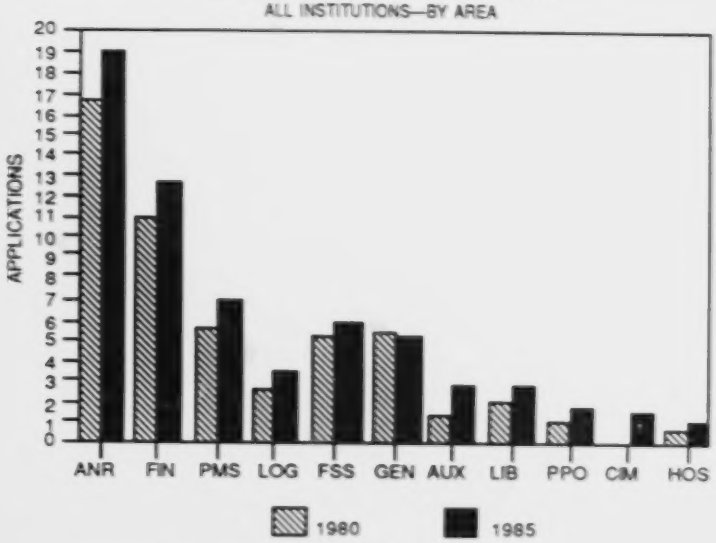
Abbreviations used for applications categories in the Figures in this chapter are as follows:

ANR	Admissions and Records
FIN	Financial Management
PMS	Planning Management and Institutional Research
LOG	Logistics and Related Services
FSS	Faculty/Staff/Student Services
GEN	General Administrative Services
AUX	Auxiliary Services
LIB	Library Applications
PPO	Physical Plant Operations
CIM	Computing Installation Management
HOS	Hospital Applications

Figure 55

AVERAGE NUMBER OF APPLICATIONS

ALL INSTITUTIONS—BY AREA



Certain information about each application was collected in 1985 but not in 1980. For example, in Tables 11.0 through 11.10 in this chapter, the categories of "MICRO" (microcomputer), "DDP" (distributed data processing), and "PROP" (proprietary software package) were not collected in 1980, so no trends can be shown in these areas. The 1985 responses to these application questions are, however, displayed for informational purposes.

Since applications are added to the CAUSE Member Institution Profile each year, and some specific applications were moved from one

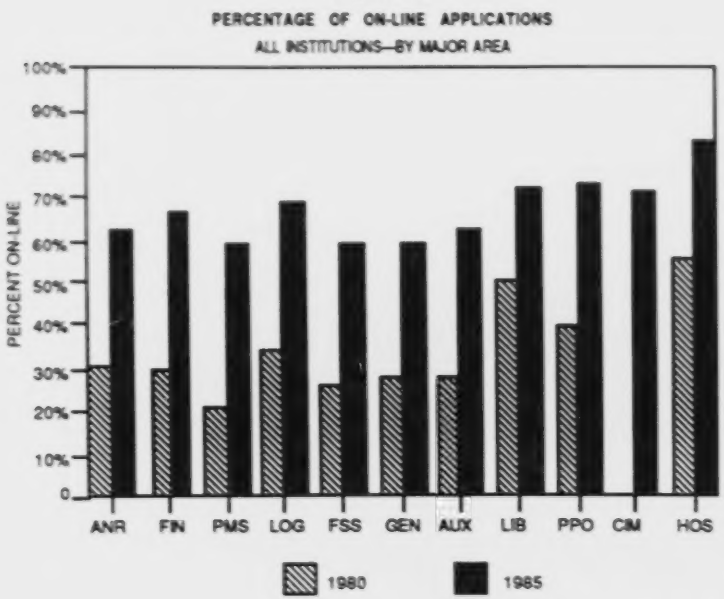
group to another between 1980 and 1985, counts from the 1980 Profile were rearranged at the detailed level into the 1985 application list to provide consistent analysis of the trends.

Note also that the hospital application area is treated differently than the other application areas. For all other areas, the 452 institutions with profiles as of 1985 and the 350 listed in 1980 were used as a base count for calculating percentages. Since only a few of the responding institutions have hospitals, the base count of institutions for this area was 52 in 1985 and 42 in 1980.

Processing Modes

Between 1980 and 1985 there was a significant shift from batch to on-line systems. In 1980 70 percent of the reported systems were listed as operating in batch mode; by 1985 this proportion had dropped to 35 percent. In the same period, the percentage of systems with at least some element of on-line processing (on-line, and combined batch and on-line) more than doubled, from 30 percent to 64 percent. This trend is consistent with a general movement by colleges and universities to collect administrative information in machine readable form in an on-line mode at the earliest possible time, and to make that information available through on-line systems throughout the campus. Figure 56 shows the percentage of on-line applications for each area in 1980 and by 1985.

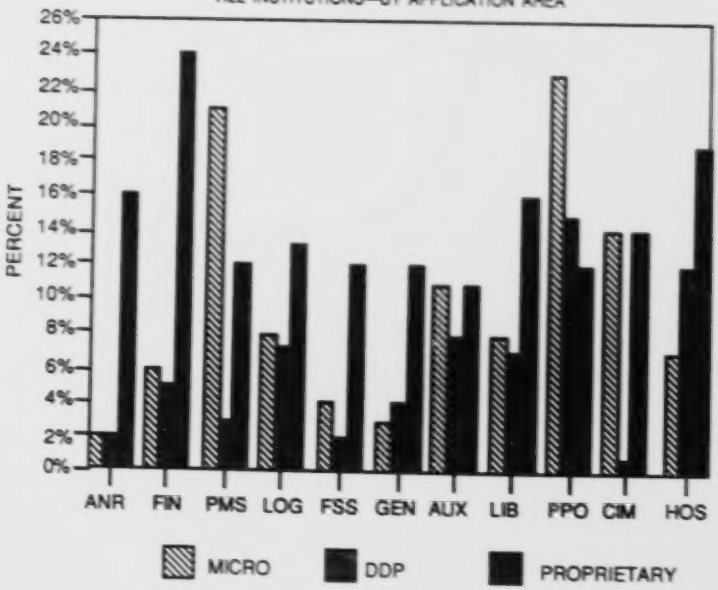
Figure 56



For each application in the 1985 profile, respondents identified systems in production using microcomputers, operating in a distributed data processing mode and/or with proprietary software. Figure 57 shows the general response to each of these questions by application area. Physical Plant Operations applications (23 percent) were reported as using microcomputers more than any other application, with Planning, Management and Institutional Research applications (21 percent) a close second. Distributed Data Processing was also reported most in use in the Physical Plant Operations applications (15%), with Hospital applications (12 percent) second. Proprietary software was reported in use most in Financial Management applications (24 percent), with Hospital applications (19 percent) second. The Admissions and Records and the Library areas each reported 16 percent of the applications in production with proprietary software packages.

Figure 57

DISTRIBUTION OF APPLICATION MODES
ALL INSTITUTIONS—BY APPLICATION AREA



Applications by Area

The rank order of the three largest application areas in 1985 is the same as it was in 1980, with the Admissions and Records area having the most number of applications reported, Financial Management the second most, and Planning, Management and Institutional Research third. These three application areas contained substantially the same applications by 1985 as in1980, and they account for over 60 percent of all applications reported. Figure 58 shows graphically the total number of systems reported in each application area for both 1980 and 1985 profiles. To provide a relative measure of how widely each application was implemented in 1980 and in 1985, Figure 59 displays the application response by area in percentage format. When compared to the same table from 1980, the distribution of application responses has changed very little, indicating that the distribution of computing resources to the application areas has not changed significantly.

Figure 58

TOTAL NUMBER OF APPLICATIONS REPORTED
ALL INSTITUTIONS—BY APPLICATION AREA

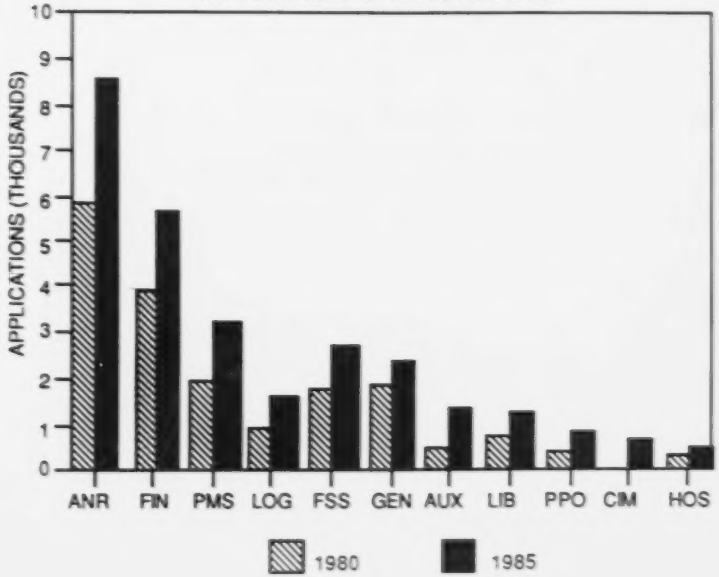
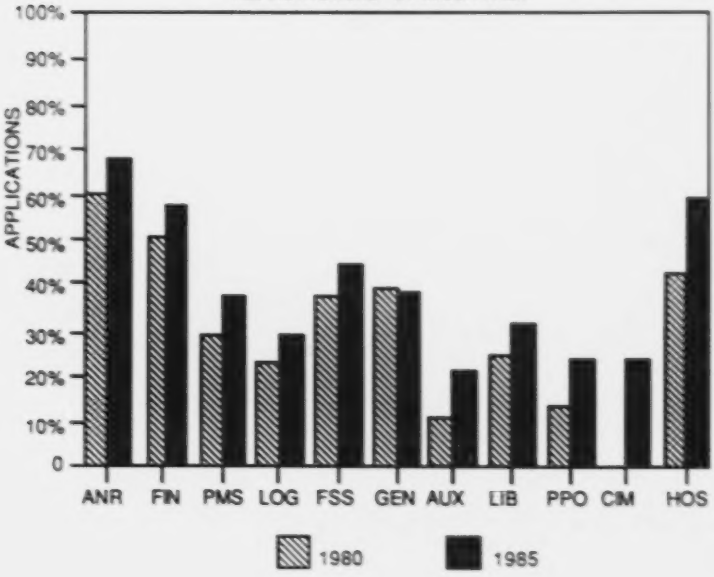


Figure 59

APPLICATIONS REPORTED BY AREA

ALL INSTITUTIONS—BY MAJOR AREA



The following comments about the survey responses in each application area refer to the "saturation level" of the area. This is measured by calculating the average response across all applications and the average percent of the applications operating in each of the processing modes. A saturation level of 50 percent for one application indicates that half of all of the responding institutions reported that application in use in some mode. The average saturation level then provides a relative measure for all of the applications listed in that specific area.

In the commentary, special note is made of four significant survey statistics: (1) the general percentage of on-line applications, (2) identification of the applications with the highest percentage operating in an on-line mode, (3) the percentage of responses that reported utilization of a proprietary software package, and (4) the applications with the most and the least responses in each area.

A bar chart following the comments for each area shows the saturation level for each application in 1980 and by 1985. The numbers on the bars of these charts correspond to the application numbers in the column labeled "APP #" in the related table.

Admissions and Records Applications

Admissions and Records continues to be the area with the most applications (30 percent of the total applications) reported in production and the highest saturation level (68 percent, up from 60 percent in 1980). An average of 64 percent of all applications in this area operate in an on-line mode, with Admissions Processing being the most likely application to use on-line processing. Only 2 percent of these applications utilize microcomputers, 2 percent operate in a distributed mode, and 16 percent utilize proprietary software packages.

Almost all of the responding institutions (98 percent) reported Student Registration Processing in production, and eleven other applications were reported in production by over 80 percent of the responding institutions. As in 1980, Correspondence Course Records (15 percent) and Final Exam Scheduling (17 percent) were the least-reported applications. The Admissions and Records applications that increased the most between 1980 and 1985 were Career Planning (from 15 percent to 32 percent) and Student Recruitment (from 34 percent to 56 percent). Two bar graphs show the saturation level for each application in the Admissions and Records area, with applications 1-14 shown in Figure 60 and applications 15-28 shown in Figure 61.

1985 TABLE 11.0

ADMISSIONS & RECORDS APPLICATIONS ANALYSIS

All Institutions

APP #	APPLICATION	BATCH	ON-LINE	B & D	MICRO	DDP	PROP	NO.
1	Undergrad Admissions Process	45	274	97	9	10	65	427
2	Graduate Admissions Process	40	161	66	5	4	41	272
3	High School Testing Records	100	131	50	2	6	42	289
4	Course Catalog Records	68	211	62	6	10	59	355
5	Schedule of Classes Prep	84	213	71	7	8	65	377
6	Student Class Scheduling	90	204	59	2	9	65	359
7	Tuition & Fees Assessment	114	204	65	1	10	63	391
8	Student Registration Process	90	261	85	3	10	77	442
9	Class Rosters	180	181	69	2	8	75	436
10	Term Student Recds & Reports	147	172	72	1	8	67	396
11	Course Add & Drop Processing	70	270	87	1	9	74	432
12	Enrollment Reporting	223	151	53	2	9	67	433
13	Enrollment Statistics	231	143	52	6	8	66	432
14	Student Ethnic Group Reporting	236	112	33	3	7	48	388
15	Term Grade Reporting	196	154	74	3	8	70	430
16	Honors Program Records	130	88	27	2	2	39	252
17	Student Transcript Records	126	151	70	0	5	67	351
18	Degree Requirements Evaluation	56	83	25	7	3	30	174
19	Correspondence Course Records	26	32	8	2	3	10	70
20	Academic Advisement Records	74	86	28	2	4	26	192
21	Career Planning	29	60	13	40	4	29	143
22	Student Recruitment	63	131	44	11	8	43	253
23	Continuing Education Units	60	83	24	5	3	25	175
24	Grade Distributions	214	107	31	1	6	49	356
25	Classroom Assignment	89	98	32	2	7	42	225

26	Veterans Reporting	150	61	23	1	3	25	237
27	Foreign Student Reporting	145	65	23	2	5	28	236
28	Final Exam Scheduling	38	31	7	1	0	11	79
	Total for 452 institutions:	3,114	3,918	1,350	129	177	1,368	8,600
	Average per institution:	6.89	8.67	2.99	0.29	0.39	3.03	19.03

Figure 60

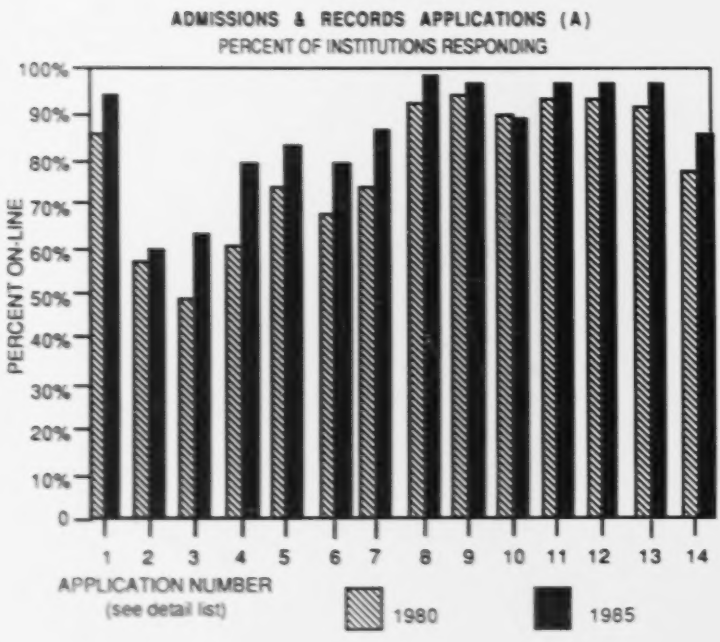
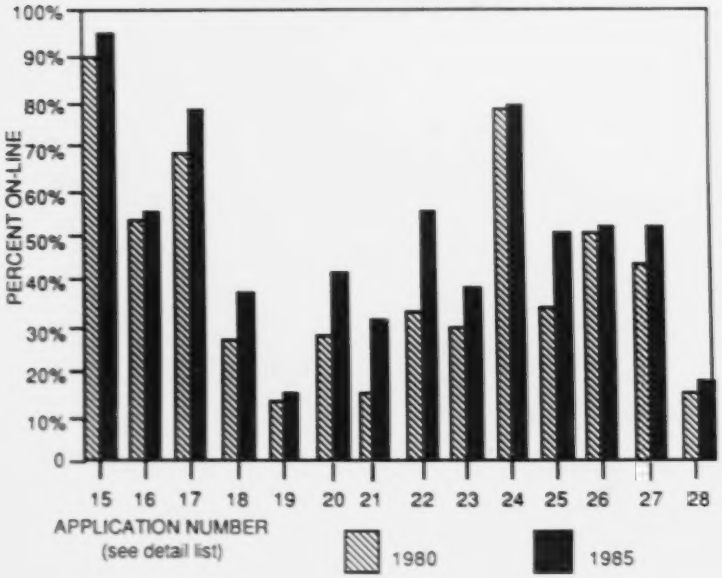


Figure 61

ADMISSIONS & RECORDS APPLICATIONS (B)

PERCENT OF INSTITUTIONS RESPONDING



Financial Management Applications

Financial management is still the area with the second largest number of applications (20 percent of the total applications) reported in production and the second highest saturation level at 58 percent, an increase from the 50 percent level reported in 1980. An average of 67 percent of all applications in this area operate in an on-line mode, with Financial Aid Accounting being the most likely application to use on-line processing. Six percent of the applications utilize microcomputers, 5 percent operate in a distributed mode, and 24 percent of the Financial Management applications utilize proprietary software packages.

Ninety-one percent of the institutions with at least one Financial Management application reported General Fund Ledger in production, and seven other applications were reported in production by over 80 percent of the responding institutions. As in 1980, Research Proposal Monitoring (15 percent) and Investment Evaluation (19 percent) were the least-reported applications. Cash Flow Analysis/Projection was the Financial Management application that increased the most between 1980 and 1985. As with Admissions and Records, two bar graphs display all of the Financial Management applications, with applications 1-11 shown on Figure 62 and applications 12-22 shown on Figure 63.

1985 TABLE 11.1

FINANCIAL MANAGEMENT APPLICATIONS ANALYSIS

All Institutions

APP #	APPLICATION	BATCH	ON-LINE	B & O	MICRO	DDP	PROP	NO.
1	General Fund Ledger	120	188	79	8	21	153	412
2	General Fund Expenditures	120	180	74	8	21	137	399
3	Departmental Expenditures	121	171	68	13	23	124	380
4	General Accounts Receivable	109	158	55	8	17	95	341
5	Student Accounts Receivable	95	212	80	8	14	89	367
6	Accounts Payable	103	181	75	6	22	124	386
7	Payroll	116	165	77	13	22	94	385
8	Employee Benefit Accounting	101	99	39	7	17	52	260
9	Retirement System Accounting	83	49	25	6	17	33	180
10	Bank Account Reconciliation	139	97	26	11	6	69	280
11	Cash Flow Analysis/Projection	46	50	8	45	6	35	151
12	Investment Records	47	35	6	38	5	20	124
13	Investment Evaluation	29	20	1	35	3	12	84
14	Grant & Contract Administration	67	56	38	27	13	31	191
15	Research Project Accounting	63	35	27	16	10	25	140
16	Research Proposal Monitoring	22	13	15	20	9	6	69
17	Financial Aid Accounting	81	192	88	12	9	86	376
18	Tuition & Fees Accounting	105	197	71	7	10	71	384
19	Residence Hall Accounting	58	125	39	8	7	45	228
20	Stores Accounting	52	62	18	21	15	21	158
21	Telephone Accounting	138	63	27	17	18	31	255
22	Travel Accounting	76	71	29	4	11	30	180
	Total for 452 institutions:	1,891	2,419	965	338	296	1,383	5,783
	Average per institution:	4.18	5.35	2.14	0.75	0.66	3.06	12.79

Figure 62

FINANCIAL MANAGEMENT APPLICATIONS (A)

PERCENT OF INSTITUTIONS RESPONDING

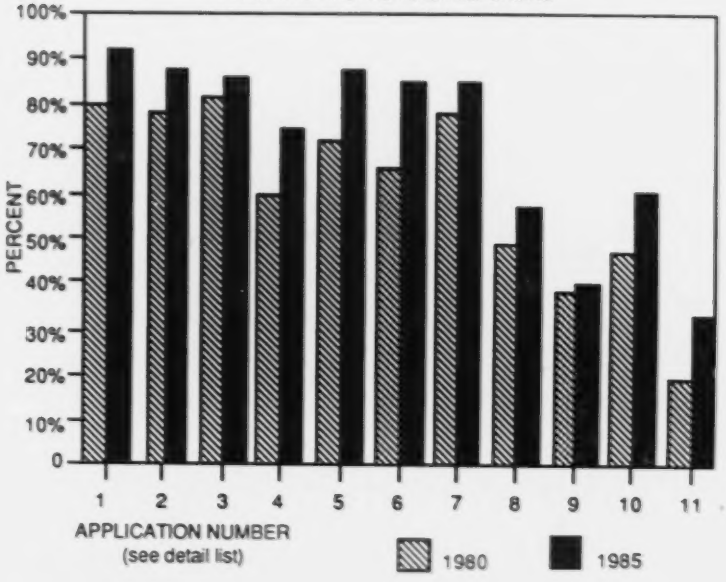
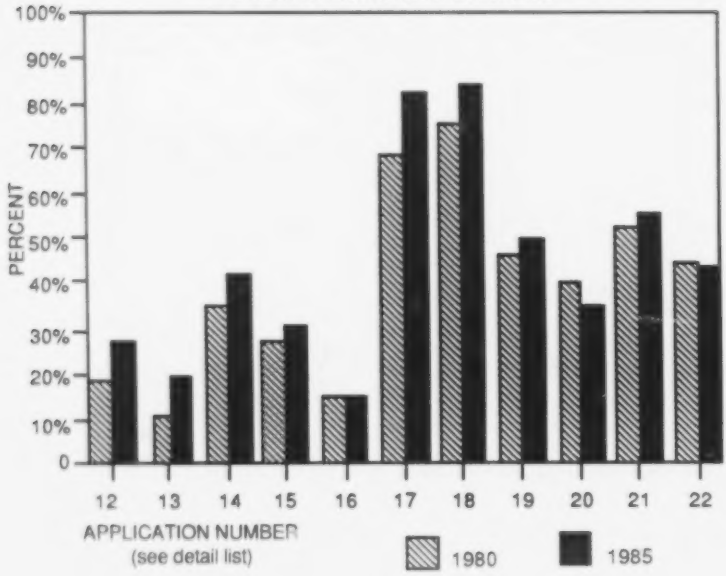


Figure 63

FINANCIAL MANAGEMENT APPLICATIONS (B)

PERCENT OF INSTITUTIONS RESPONDING



Planning, Management, and Institutional Research Applications

The third most reported application area (11 percent of the total applications reported), Planning, Management, and Institutional Research applications, generally increased in saturation level from 28 percent in 1980 to 37 percent in 1985. An average of 59 percent of all applications in this area operate in an on-line mode, with Financial Modeling being the most likely to use on-line processing. Twenty-one percent of these applications utilize microcomputers, while 3 percent operate in a distributed mode. Twelve percent of these applications utilize proprietary software packages. A knowledge of current operations in institutional research offices suggests that many of these proprietary software packages are analytical tools in operation on microcomputers.

Of those institutions with at least one Planning, Management, and Institutional Research application, 76 percent reported Budget Preparation in production. Only four other applications were reported in production by over 50 percent of the responding institutions. Resource Requirements Modeling and ICLM/Cross-over Studies were the two least-reported applications, and Budget Forecasting was the application that increased the most between 1980 and 1985.

1985 TABLE 11.2

PLANNING MGMT & INSTITUTIONAL RESEARCH APPLICATIONS ANALYSIS

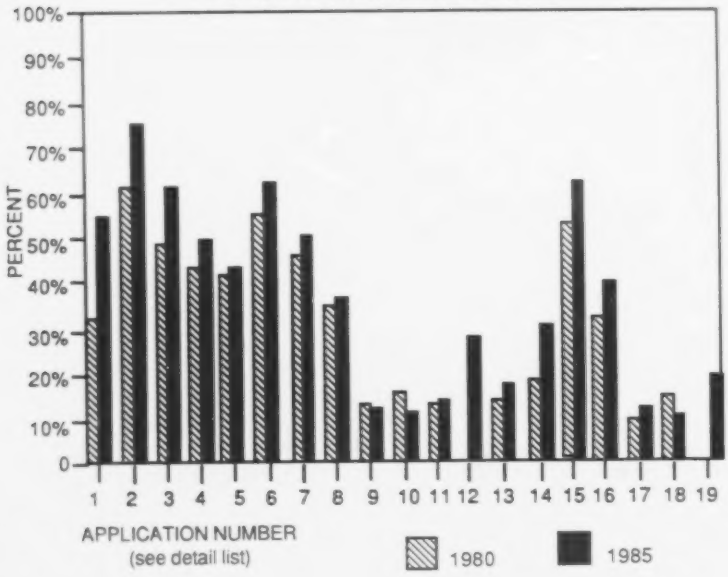
All Institutions

APP #	APPLICATION	BATCH	ON-LINE	B & O	MICRO	D DP	PROP	NO.
1	Budget Forecasting	60	81	27	102	10	38	249
2	Budget Preparation	98	137	47	83	5	51	345
3	Budget Analysis	79	100	39	77	6	45	282
4	Budget Position Control	76	94	35	18	7	36	226
5	Institutional Cost Studies	96	44	19	48	5	24	198
6	Faculty Salary Analysis	160	62	28	46	10	25	287
7	Support Staff Salary Analysis	130	51	21	33	5	20	231
8	Faculty Activity Analysis	84	40	25	13	4	9	163
9	Support Staff Activity Analysis	32	13	6	4	1	4	56
10	Resource Req'ments Modeling	21	8	7	16	3	5	50
11	Student Flow Modeling	32	11	4	21	2	4	65
12	Financial Modeling	15	37	6	72	8	20	125
13	Long Range Planning	21	18	3	37	5	10	77
14	Enrollment Forecasting	66	24	8	51	4	12	142
15	HEGIS Reporting	187	66	22	9	9	26	267
16	Data Element Dictionary	49	89	37	1	3	35	180
17	Institutional Code Control	23	29	2	0	0	9	55
18	ICLM/Cross-over Studies	45	3	2	2	1	2	51
19	Project Management	23	28	13	27	1	8	88
	Total for 452 institutions:	1,297	935	351	660	89	383	3,159
	Average per institution:	2.87	2.07	0.78	1.46	0.20	0.85	6.99

Figure 64

PLANNING, MANAGEMENT, & INSTITUTIONAL RESEARCH APPLICATIONS

PERCENT OF INSTITUTIONS RESPONDING



Logistics and Related Services Applications

Logistics and Related Services applications accounted for 6 percent of the total applications reported through 1985, and the saturation level increased only slightly, from 26 percent in 1980 to 29 percent in 1985. An average of 68 percent of all applications in this area operate in an on-line mode, with Purchasing Information Systems being the most likely application to use on-line processing. Eight percent of the Logistics applications utilize microcomputers, 7 percent operate in a distributed mode, and 13 percent utilize proprietary software packages.

Sixty-four percent of the institutions reporting at least one Logistics and Related Services applications reported equipment inventory in production, and only one other application, Vendor Information Systems, was reported in production by over 50 percent of the responding institutions. Office Machine Repair (8 percent) was the least reported, but it will be interesting to see if this application increases in the future as more institutions develop their own capability to service and maintain microcomputers and other new electronic office equipment. Crime Reporting was the application that increased the most between 1980 and 1985.

1985 TABLE 11.3

LOGISTICS AND RELATED SERVICES APPLICATIONS ANALYSIS

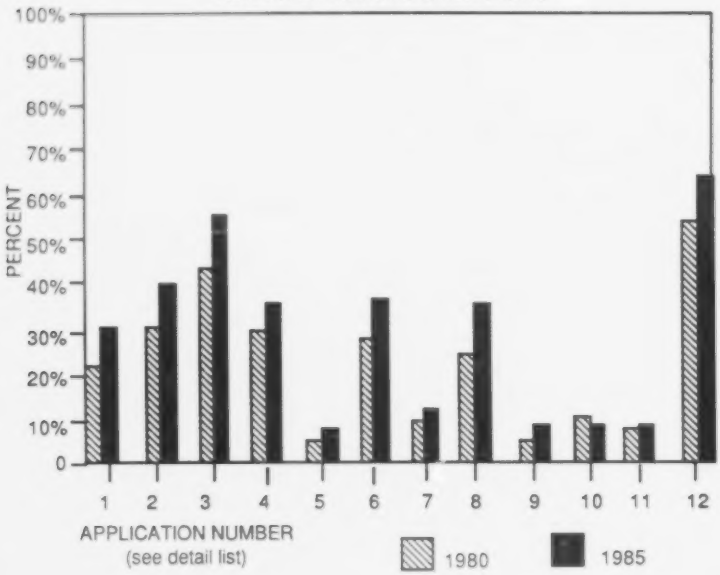
All Institutions

APP #	APPLICATION	BATCH	ON-LINE	B & O	MICRO	DDP	PROP	NO.
1	Purchase Order Follow-up	29	78	19	7	14	34	142
2	Purchasing Information	35	97	28	6	17	43	182
3	Vendor Information	56	128	46	7	12	63	251
4	Stores Inventory	59	59	20	18	13	12	163
5	Office Machine Repair	20	10	3	3	2	3	38
6	Automobile Registration	57	74	15	16	10	10	166
7	Parking Lot Space Assignment	26	18	6	9	6	4	60
8	Traffic Violation Records	42	74	21	24	13	12	163
9	Crime Reporting	8	19	1	10	7	2	40
10	Car Pool Matching	21	11	1	5	3	1	39
11	Motor Pool Records	14	15	7	5	3	1	40
12	Equipment Inventory	130	110	32	15	8	21	291
	Total for 452 institutions	497	693	199	125	108	206	1,575
	Average per institution:	1.10	1.53	0.44	0.28	0.24	0.46	3.49

Figure 65

LOGISTICS & RELATED SERVICES APPLICATIONS

PERCENT OF INSTITUTIONS RESPONDING



Faculty/Staff/Student Services Applications

Faculty/Staff/Student Services applications accounted for 9 percent of the total applications reported through 1985, and the saturation level more than doubled from 18 percent in 1980 to 45 percent by 1985. An average of 59 percent of all applications in this area operate in an on-line mode, with financial aid evaluation being the most likely application to use on-line processing. Four percent of these applications utilize microcomputers, and 2 percent operate in a distributed mode. Twelve percent of the applications in this area utilize proprietary software packages.

Of those institutions reporting Faculty/Staff/Student Services applications, 79 percent reported Financial Aid Awards in production, and four other applications were reported in production by over 60 percent of the responding institutions. Student Psychological Testing (6 percent) was the least reported application, while Teacher and Job Placement was the application that increased the most between 1980 and 1985.

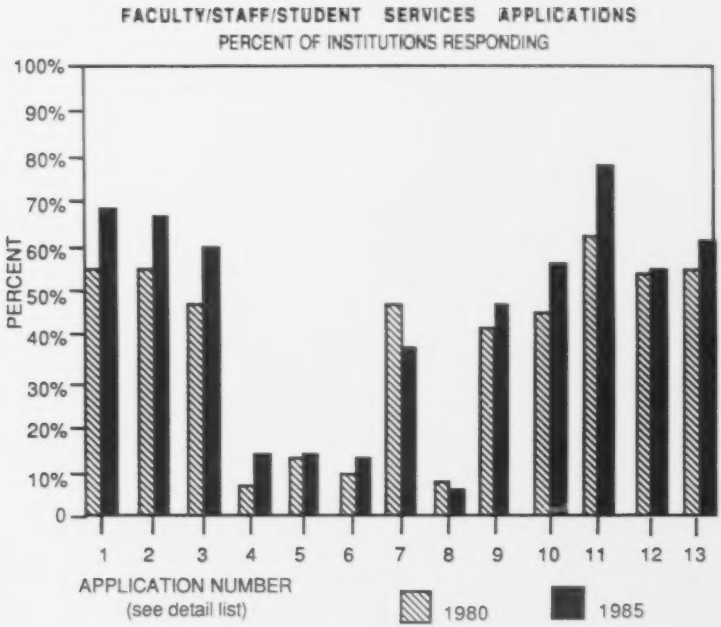
1985 TABLE 11.4

FACULTY/STAFF/STUDENT SERVICES APPLICATIONS ANALYSIS

All Institutions

APP #	APPLICATION	BATCH	ON-LINE	B & O	MICRO	DDP	PROP	NO.
1	Faculty/Staff Directory Prep	138	112	43	21	6	18	314
2	Student Directory Prep	157	107	33	4	4	35	304
3	Student Housing Reports	115	91	46	15	5	32	269
4	Teacher & Job Placement	20	24	10	10	0	3	62
5	Student Counseling Records	23	25	9	8	0	8	64
6	Fraternity/Sorority Rush	37	12	5	3	1	1	57
7	Staff Ethnic Group Reporting	115	39	13	3	3	16	170
8	Student Psychological Tests	15	8	1	3	0	2	27
9	Instructor Evaluation	144	44	18	1	6	9	212
10	Financial Aid Evaluation	50	121	71	16	1	67	259
11	Financial Aid Awards	83	167	90	12	5	72	355
12	Student Employment Records	88	94	54	6	6	28	247
13	Work Study Records	98	119	54	7	5	33	279
	Total for 452 institutions:	1,083	963	447	109	42	324	2,619
	Average per institution:	2.40	2.13	0.99	0.24	0.09	0.72	5.79

Figure 66


FACULTY/STAFF/STUDENT SERVICES APPLICATIONS
PERCENT OF INSTITUTIONS RESPONDING
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0
PERCENT
1 2 3 4 5 6 7 8 9 10 11 12 13
APPLICATION NUMBER
(see detail list)
1980
1985

General Administrative Services Applications

General Administrative Services applications accounted for 8 percent of all applications reported, with a 1985 saturation level of 39 percent, essentially unchanged from the 1980 level. An average of 59 percent of all applications operate in an on-line mode, with the Foundation and Gift Records application most likely to be on-line. Microcomputer utilization in this area is reported by 3 percent of the responding institutions, and distributed data processing mode by 4 percent, while 16 percent of the applications utilize proprietary software.

Alumni Records was the most reported application (81 percent), with Personnel Records second (76 percent). Skills/Interest Inventory (7 percent) and Curriculum Planning (9 percent) were the least reported applications. Personnel Evaluation increased the most (by 58 percent) between 1980 and 1985.

1985 TABLE 11.5

GENERAL ADMINISTRATIVE SERVICES APPLICATIONS ANALYSIS

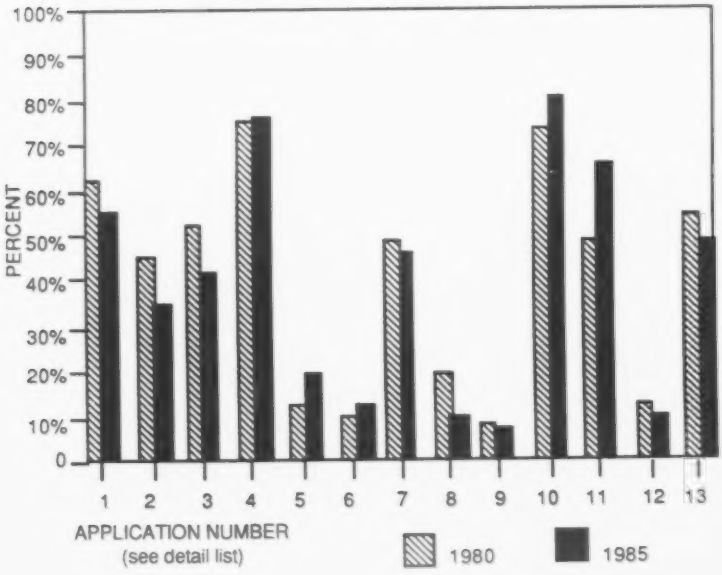
All Institutions

APP #	APPLICATION	BATCH	ON-LINE	B & O	MICRO	DDP	PROP	NO.
1	Facilities Inventory	137	65	39	2	11	19	251
2	Facilities Util. Analysis	105	31	15	3	7	10	160
3	Classroom Util. Analysis	121	44	18	1	2	14	186
4	Personnel Records	89	159	84	9	10	56	344
5	Personnel Evaluation	34	35	13	3	3	10	86
6	Personnel Placement	17	21	12	1	3	8	52
7	Federal Compliance Reporting	144	26	21	3	8	20	198
8	Civil Service Position Records	27	8	10	0	2	0	47
9	Skills/Interest Inventory	12	13	4	0	1	6	30
10	Alumni Records	72	178	96	15	13	60	366
11	Foundation & Gifts Records	41	152	76	19	15	53	297
12	Curriculum Planning	18	13	7	2	2	3	41
13	Test Scoring & Analysis	123	56	19	17	10	9	218
	Total for 452 institutions:	940	801	414	75	87	268	2,276
	Average per institution:	2.08	1.77	0.92	0.17	0.19	0.59	5.04

Figure 67

GENERAL ADMINISTRATIVE SERVICES APPLICATIONS

PERCENT OF INSTITUTIONS RESPONDING



Auxiliary Services Applications

Auxiliary Services Applications accounted for only 4 percent of the total reported applications, but the saturation level more than doubled to 59 percent in 1985 from the 28 percent level in 1980. Most of this increase can be accounted for by the fact that four applications were added to the survey between 1980 and 1985. Sixty-three percent of the Auxiliary Services applications were reported operating in an on-line mode, with 91 percent of the Events Calendar Preparation on-line. Microcomputer utilization is 11 percent, distributed processing was reported by 8 percent, and proprietary software by 11 percent of the institutions.

General Mailing List Systems were reported by the largest number of institutions (60 percent), and no other application in this area was reported in production by more than 50 percent of the responding institutions. Faculty Club Billing (7 percent) was the least-reported application. Even though only 55 institutions had reported it by 1985, Events Calendar Preparation (12 percent) was the application that increased most between 1980 and 1985.

1985 TABLE 11.6

AUXILIARY SERVICES APPLICATIONS ANALYSIS

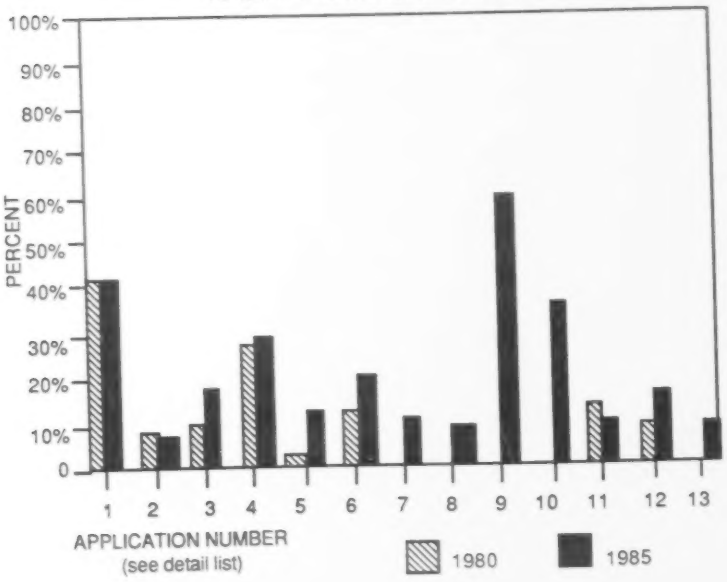
All Institutions

APP #	APPLICATION	BATCH	ON-LINE	B & O	MICRO	DDP	PROP	NO.
1	Residence Hall Billing	80	71	34	1	7	27	192
2	Faculty Club Billing	13	9	2	4	7	5	31
3	Food Service Menu & Inventory	19	23	3	27	11	15	78
4	Bookstore Inventory & Operations	39	40	18	28	22	20	131
5	Events Calendar & Prep	5	35	4	13	3	5	55
6	Room Reservations	20	49	10	12	5	9	95
7	Audio/Visual Booking/Billing	11	21	4	13	3	5	50
8	College/University Press	14	10	6	6	8	4	40
9	General Mailing List System	116	113	31	11	2	27	270
10	Computer Billing System	87	44	27	0	3	13	161
11	Health Service System	19	13	6	4	5	5	44
12	Athletic Event Ticket System	31	21	7	11	11	5	72
13	Sports Information System	10	14	3	11	8	4	41
	Total for 452 institutions:	464	463	155	141	95	144	1,260
	Average per institution:	1.03	1.02	0.34	0.31	0.21	0.32	2.79

Figure 68

AUXILIARY SERVICES APPLICATIONS

PERCENT OF INSTITUTIONS RESPONDING



Library Applications

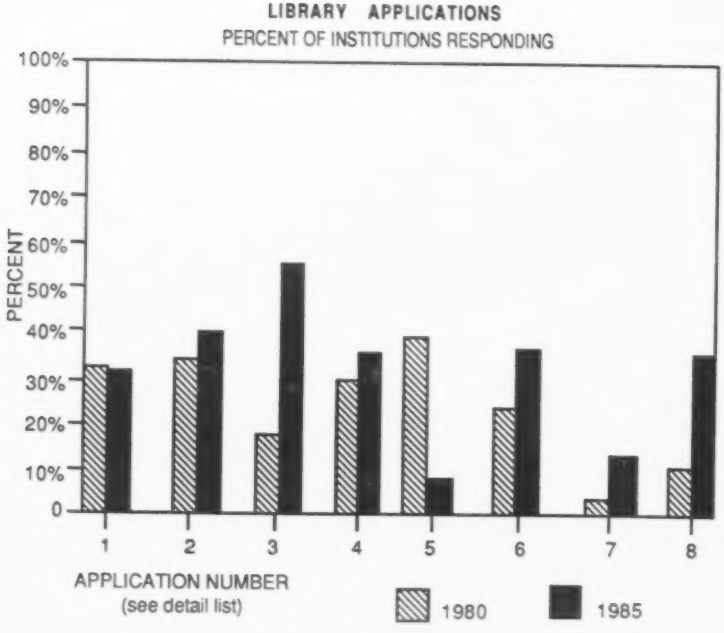
Library Applications accounted for 4 percent of the total applications reported in 1985. This number, and the 32 percent average saturation level for 1985, both reflect little relative change from 1980. On-line processing, on the other hand, was reported for 72 percent of the applications in 1985, up a third from 50 percent in 1980. Cataloging was the application reported most frequently in operation in an on-line mode. Microcomputers were reported for 8 percent of the applications, and 7 percent reported distributed processing. Proprietary software was used for 16 percent of the Library applications.

Card and Material Preparation and Control (56 percent) was the only application reported in production by over half of the responding institutions. It is likely, however, that some libraries have independent computing installations that were not reported by the respondents. Serials Holdings (8 percent) went from the most reported application in 1980 to the least in 1985; however, that application may have been absorbed into one of the others during the five-year period.

1985 TABLE 11.7
LIBRARY APPLICATIONS ANALYSIS
All Institutions

APP #	APPLICATION	BATCH	ON-LINE	B & O	MICRO	DDP	PROP	NO.
1	Acquisitions	29	78	19	7	14	34	142
2	Cataloging	35	97	28	6	17	43	182
3	Card & Mat'l Prep & Control	56	128	46	7	12	63	251
4	Circulation Control	59	59	20	18	13	12	163
5	Serials Holdings	20	10	3	3	2	3	38
6	Bibliographic Search Service	57	74	15	16	10	10	166
7	Fugitive Material Indexing	26	18	6	9	6	4	60
8	Educational Media Services	42	74	21	24	13	12	163
	Total for 452 institutions:	324	538	158	90	87	181	1,165
	Average per institution:	0.72	1.20	0.35	0.20	0.19	0.40	2.58

Figure 69


LIBRARY APPLICATIONS
PERCENT OF INSTITUTIONS RESPONDING
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0
PERCENT
1
2
3
4
5
6
7
8
APPLICATION NUMBER
(see detail list)
1980
1985

Physical Plant Operations

Physical Plant applications accounted for only 3 percent of the total reported applications in 1985, but that number represents a sizeable increase over the number of systems reported in production in 1980. The relative saturation level almost doubled, from 13 percent in 1980 to 24 percent in 1985. On-line processing also went from 40 percent in 1980 to 73 percent in 1985, with 93 percent of the Energy Monitoring systems reported as operating in an on-line mode. That application was also the most reported Physical Plant system in operation, listed by 37 percent of the institutions reporting some type of Physical Plant application. Building Access Control was the least reported application, listed by only 8 percent of the responding institutions.

Microcomputers were listed as the processing mode for 23 percent of the Physical Plant applications, the highest percentage of any area. Distributed processing mode was also the highest of all areas at 15 percent, and the percentage of applications operating with proprietary software packages was 12 percent.

1985 TABLE 11.8

PHYSICAL PLANT OPERATIONS APPLICATIONS ANALYSIS

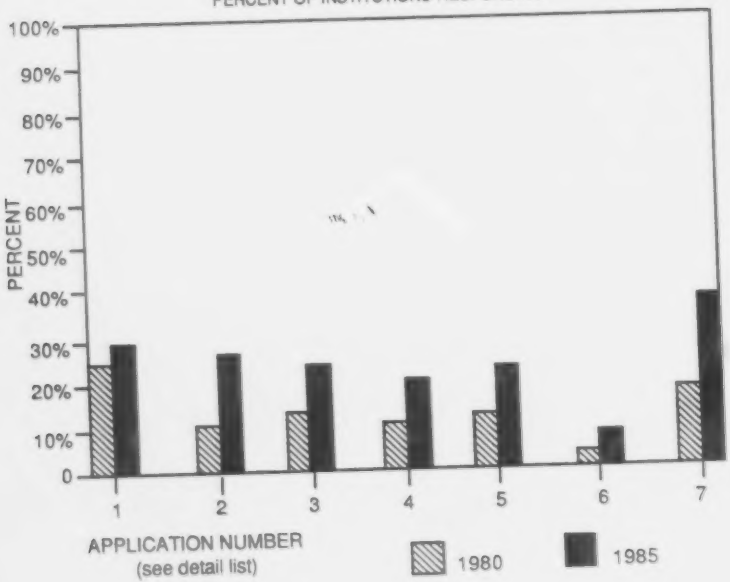
All Institutions

APP #	APPLICATION	BATCH	ON-LINE	B&O	MICRO	DDP	PROP	NO.
1	Physical Plant Accounting	48	40	24	22	14	15	133
2	Physical Plant Job Schedule	30	36	13	32	16	8	117
3	Building Maintenance Costs	39	29	13	16	15	13	102
4	Equipment Preventive Maintenance	28	23	12	22	12	7	90
5	Key Inventory	36	33	3	27	7	5	103
6	Building Access Control	7	15	1	8	11	6	38
7	Energy Monitoring System	12	77	15	47	33	37	186
	Total for 452 institutions:	200	253	81	174	110	91	749
	Average per institution	0.44	0.56	0.18	0.39	0.24	0.20	1.66

Figure 70

PHYSICAL PLANT OPERATIONS APPLICATIONS

PERCENT OF INSTITUTIONS RESPONDING



Computing Installation Management Applications

Computing Management applications accounted for only 3 percent of the total reported applications. The relative saturation level in this area is 24 percent, which is fairly low overall. On-line processing is done for 46 percent of the Computing Management applications in place. Hardware Performance Monitoring was the most prevalent application in this area, with 21 percent of the responding institutions reporting they had it in operation– 62 percent of those indicated it was running in an on-line mode. At the other end, Forms Inventory was reported by only 10 percent of the survey pool. Microcomputers were used in the Computing Management area in 14 percent of the applications, as was proprietary software.

1985 TABLE 11.9

COMPUTING INSTALLATION MANAGEMENT APPLICATIONS ANALYSIS

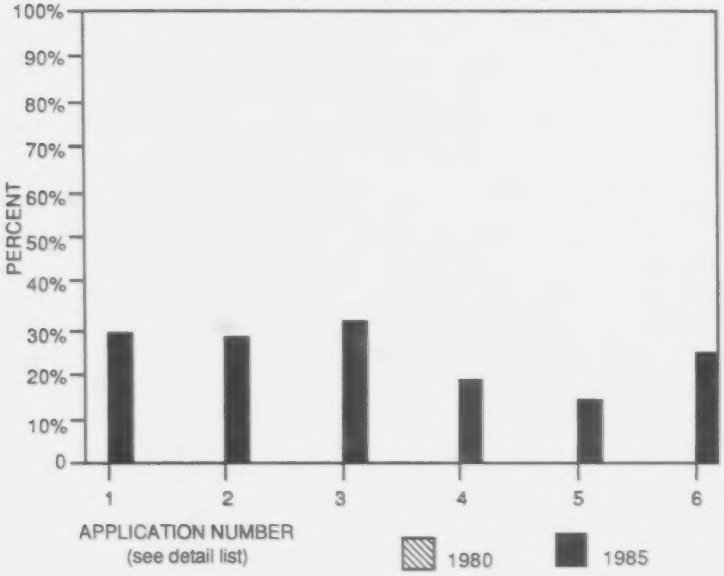
All Institutions

APP #	APPLICATION	BATCH	ON-LINE	B&O	MICRO	DDP	PROP	NO.
1	Hardware Inventory/Accounting	21	74	9	28	3	12	132
2	Chargeback System	63	40	17	2	1	12	125
3	Hardware Performance Monitor	32	86	15	0	1	33	139
4	Storage Media Management	25	46	10	1	1	15	85
5	Forms Inventory	23	23	2	17	0	2	65
6	Project Management	24	31	8	43	3	16	107
	Total for 452 institutions:	188	300	61	91	9	90	653
	Average per institution	0.41	0.66	0.16	0.20	0.02	0.20	1.45

Figure 71

COMPUTING INSTALLATION MANAGEMENT APPLICATIONS

PERCENT OF INSTITUTIONS RESPONDING



Hospital Applications

Hospital applications accounted for only 1 percent of the total reported by the 452 institutions, but the saturation level and other percentages were calculated on the basis of the 52 institutions that did report hospital applications. On that basis, the general saturation level in 1985 was 47 percent, up from 35 percent in 1980. On-line processing increased from 56 percent in 1980 to 83 percent in 1985, with all of the Physician Support Systems operating in an on-line mode, and more than half of the other applications reported at greater than 80 percent on-line. The Hospital application reported most often was Patient Billing/Accounts Receivable (81 percent), and the least reported was Housekeeping (13 percent).

Seven percent of the Hospital applications were reported operating on microcomputers, and 12 percent operate in distributed data processing mode. Proprietary software packages were listed for 19 percent of the applications.

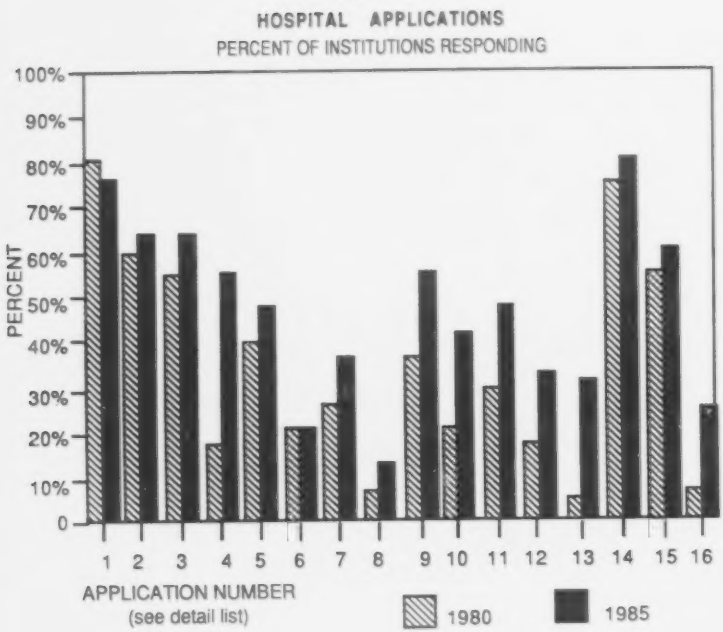
1985 TABLE 11.10

HOSPITAL APPLICATIONS ANALYSIS

All Institutions

APP #	APPLICATION	BATCH	ON-LINE	B & O	MICRO	DDP	PROP	NO.
1	Patient Registration/Admission	3	24	7	3	6	9	40
2	Hospital Census	7	17	8	1	3	7	34
3	Medical Records	8	13	9	2	2	6	34
4	Appointments & Scheduling	4	15	6	1	2	5	29
5	Central Supply Inventory	8	8	5	4	3	4	25
6	Communications & Order Entry	2	6	2	0	1	3	11
7	Dietary Food Service	5	4	6	4	2	3	19
8	Housekeeping	1	2	2	1	1	1	7
9	Laboratory Information System	1	18	7	1	8	8	39
10	Radiology Info System	3	11	5	1	5	3	22
11	Pharmacy Info System	5	13	5	1	5	2	25
12	Nursing Station Support System	2	10	3	1	1	3	17
13	Physician Support System	0	10	4	1	1	3	16
14	Patient Billing/Accts Rec	8	16	13	3	3	9	42
15	Hospital Financial Info System	7	13	9	3	2	5	31
16	Bloodbank Records	3	6	3	1	3	2	13
	Total for 452 institutions:	67	186	94	28	48	73	394
	Average per institution:	0.15	0.41	0.21	0.06	0.11	0.16	0.87

Figure 72


HOSPITAL APPLICATIONS
PERCENT OF INSTITUTIONS RESPONDING
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0
PERCENT
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
APPLICATION NUMBER
(see detail list)
1980
1985

APPENDIX
1985 MEMBER INSTITUTION PROFILE SURVEY
400 RESPONDING INSTITUTIONS

Adelphi University
Akron, University of
Alabama State University
Alabama/Huntsville, University of
Alabama/University, University of
Alamo Community Coll District
Alaska/Anchorage, University of
Albany Medical College
Albion College
Alfred University
Allegheny College
Alma College
Amarillo College
Antioch University
Appalachian State University
Aquinas College
Arizona State University
Arizona, University of
Arkansas For Med Sciences,Univ of
Arkansas Tech University
Armstrong State College
Asian Institute of Technology
Athabasca University
Augsburg College
Augusta College
Austin College
Austin Peay State University
Baldwin-Wallace College
Ball State University
Barnard College
Beaver College
Belmont Abbey College
Bentley College
Bethany Nazarene College
Bethel College
Bluefield State College
Boston College
Boston University
Bowie State College
Bowling Green State University
Bradley University
Brandeis University
Bridgeport, University of
Brunswick Junior College
Bryn Mawr College
Bucknell University
Burlington County College
C. S. Mott Community College
Cal State University/Dominguez Hills
Cal State University/Fullerton
Cal State University/Long Beach
California Institute of Technology
California State Polytech University
California/Davis, University of
California/Irvine, University of
California/San Diego, University of
Camosun College
Canisius College
Capilano College
Capital University
Castleton State College
Catholic University of America
Cedarville College
Central Florida, University of
Central Michigan University
Central Missouri State University
Central New England Coll of Tech
Central Washington University
Chattanooga State Tech CC
Chemeketa Community College
Cincinnati Technical College
Cincinnati, University of
Clark Technical College
Clark University
Clayton Junior College
Clemson University
Cleveland State Community College
Colorado College
Colorado/Boulder, University of
Colorado/Denver, University of
Columbia University
Connecticut Health Ctr,University of
Connecticut, University of
Covenant College
Creighton University
Cuyahoga Community College
Dalhousie University
Dartmouth College
Davidson College
DePaul University
Delaware County Comm College
Denison University
Denver, University of
Dickinson College
Drake University
Drew University

DuPage, College of
Dutchess Community College
East Carolina University
East Tennessee State University
Eastern Connecticut State University
Eastern Illinois University
Eastern Kentucky University
Eastern Michigan University
Eastern Montana College
Eastern New Mexico University
Eastern Washington University
Ecole Des Hautes Etudes Commer
Edison State Community College
Elizabeth City State University
Emporia State University
Evangel College
Evergreen State College
Fairleigh Dickinson University
Fayetteville State University
Florida Institute of Technology
Florida International University
Florida State University
Fort Hays State University
Franklin and Marshall College
GMI Engineering & Mgmt Institute
Gateway Technical Institute
Georgia Institute of Technology
Georgia State University
Georgia, University of
Gonzaga University
Grace College & Seminary
Grand Valley State College
Grant Mac Ewan Community College
Greenville College
Grinnell College
Hamilton College
Hampton University
Harris-Stowe State College
Hartford, University of
Henry Ford Community College
Hofstra University
Horry-Georgetown Tech College
Howard University
Idaho State University
Illinois Eastern Community College
Incarnate Word College
Indiana University of PA
Indiana Vocational Tech College
Inst Tecn Estudios Sup de Mont
Institute of Paper Chemistry
Iona College
Iowa, University of
Ithaca College
Jersey City State College
Johns Hopkins University
Johnson and Wales College
Kansas Medical Center, University of
Kansas, University of
Kaskaskia College
Kearney State College
Kennesaw College
Kent State University
Kentucky State University
Kentucky Wesleyan College
Kentucky, University of
Kenyon College
Keyano College
La Guardia Community College
Lander College
Lansing Community College
Le Moyne College
Lehigh University
Lethbridge, University of
Long Island Univ/Brooklyn Ctr
Louisiana State University/Eunice
Loyola College
Loyola University of New Orleans
Loyola University of Chicago
Macalester College
Macomb Community College
Madison Area Technical College
Mansfield University
Marquette University
Mars Hill College
Maryland at Baltimore, University of
Maryland/Balto County, University of
Mass Institute of Technology
Mass Medical Center, University of
Massachusetts/Amherst, Univ of
McMaster University
Medical College of Georgia
Melbourne, University of
Memorial University of Newfoundland
Memphis State University
Mercer County Community College
Mercer University
Mercy College of Detroit
Meredith College
Miami, University of
Miami-Dade Community College
Michigan State University
Michigan/Ann Arbor, University of
Michigan/Dearborn, University of
Michigan/Flint, University of
Mid-Michigan Community College
Mid-South Bible College

Mid-State Technical Institute
Middle Georgia College
Middle Tennessee State University
Mills College
Mississippi State University
Missouri/St Louis, University of
Montana State University
Montana, University of
Montclair State College
Montgomery County Comm College
Morningside College
Mount Allison University
Mount Holyoke College
Mount Royal College
Mount Saint Mary's College
Mount Vernon College
Mt Vernon Nazarene College
Murray State University
NW Alabama State Jr College
Nashville State Technical Institute
Nassau Community College
Nazareth College of Rochester
Nebraska/Omaha, University of
New Hampshire College
New Hampshire, University of
New Mexico State University
New Mexico, University of
New Orleans, University of
New Rochelle, College of
New South Wales, University of
No Carolina Central University
No Carolina/Chapel Hill, University of
No Carolina/Charlotte, University of
No Carolina/Greensboro, Univ of
North Adams State College
North Central College
North Central Technical College
North Central Technical Institute
North Florida, University of
North Texas State University
Northampton County Area CC
Northeast Missouri State University
Northeastern Junior College
Northeastern Oklahoma St Univ
Northern Colorado, University of
Northern Iowa, University of
Northern Kentucky University
Northwestern Michigan College
Norwich University
Ohio College of Podiatric Medicine
Ohio State University
Ohio University
Okla State Univ/Sch of Tech Training
Oklahoma State Technical Institute
Oklahoma, University of
Old Dominion University
Olds College
Oregon Health Sciences University
Oregon Institute of Technology
Pacific Lutheran University
Pembroke State University
Pepperdine University
Philadelphia College of Art
Phillips University
Pima Community College
Pittsburg State University
Pittsburgh, University of
Point Loma Nazarene College
Polytechnic Institute of New York
Portland State University
Presbyterian College
Pretoria, University of
Princeton University
Puerto Rico, University of
Quincy College
Radford University
Ramapo College of New Jersey
Regina, University of
Regis College
Rhode Island College
Rhode Island School of Design
Rhode Island, University of
Rochester Institite of Technology
Rockefeller University
Rogue Community College
Rush University
SUNY College at Old Westbury
SUNY/Albany
SUNY/Binghamton
SUNY/Buffalo
SUNY/Downstate Medical Center
SUNY/Monroe Community College
SUNY/Potsdam
SUNY/Stony Brook
Saint Louis University
Salem State College
San Diego State University
Santa Clara, University of
Saskatchewan, University of
Scranton, University of
Seattle University
Shelby State Community College
Shepherd College
Simmons College
Sinclair Community College
Smith College

Somerset County College
Sonoma State University
South Dakota Schl/Mines & Tech
South Dakota, University of
South, University of the
Southern California, University of
Southern Colorado, University of
Southern Ill Univ/Carbondale
Southern Ill Univ/Edwardsville
Southwestern College
Southwestern Louisiana, Univ of
Spoon River College
St Benedict, College of
St Catherine, College of
St John's University
St Lawrence University
St Mary's College of Maryland
Stanford University
State Technical Inst/Knoxville
State Technical Inst/Memphis
Stephens College
Stockton State College
Susquehanna University
Swarthmore College
Syracuse University
Taylor University
Temple University
Tennessee State University
Tennessee Technological University
Tennessee/Knoxville, University of
Texas A&M Univ/College Station
Texas A&M University/Galveston
Texas Christian University
Texas Lutheran College
Thomas Jefferson University
Thornton Community College
Towson State University
Transylvania University
Trenton State College
Tri-Cities State Tech Institute
Trident Technical College
Triton College
Troy State University/Montgomery
Tufts University
US Coast Guard Academy
Union College
Utah Tech College at Provo
Utah, University of
Valparaiso University
Vanderbilt University
Vermont, University of
Villanova University
Vincennes University
Virginia Commonwealth University
Virginia Military Institute
Virginia Polytech Inst & State Univ
Volunteer State Community College
Walters State Community College
Washington & Lee University
Washington State University
Washington, University of
Washtenaw Community College
Waubonsee Community College
Waukesha County Tech Institute
Weber State College
Webster University
West Chester University
West Coast University
West Florida, University of
West Virginia University
Western Carolina University
Western Illinois University
Western New England College
Western Washington University
Westminster College of SLC
Wheaton College
Whitman College
Widener University
William and Mary, College of
Williams College
Williamsport Area Community College
Winthrop College
Wisconsin/Eau Claire, University of
Wisconsin/La Crosse, University of
Wisconsin/Milwaukee, University of
Wisconsin/Oshkosh, University of
Wisconsin/Stevens Point, Univ of
Wisconsin/Superior, University of
Wittenberg University
Worcester State College
Wright State University
Wyoming, University of

Introduction

The information in this Profile is used to maintain a database of CAUSE member campuses. This database is used by the CAUSE Administrative Systems Query (ASQ) service to answer questions from members, and is also the basis for the CAUSE information systems Profile Monograph. We hope you will be able to complete this Profile quickly, and are confident that the information will prove to be very useful to you and other CAUSE members. If you have any questions about this Profile, or suggestions for future Profiles, please contact the CAUSE National Office at 737 Twenty-ninth Street, Boulder, Colorado 80303 (303) 449-4430.

Institutional Section

INSTITUTION NAME: _____

CAUSE MEMBER REP: _____

MEMBER REP TITLE: _____

MEMBER REP PHONE: _____

OFFICE NAME: _____

OFFICE ADDRESS: _____

CITY, STATE, ZIP: _____

CONTROL: ( ) PUBLIC ( ) PRIVATE

TYPE: ( ) UNIV ( ) 4-YR ( ) 2-YR

ENROLLMENT: _____

DIRECTOR OF AIS: _____

INSTITUTIONAL ANNUAL OPERATING BUDGET: _____

Computing & Information Systems Policy Section

ADMINISTRATIVE/ACADEMIC COMPUTING REPORT TO:

ADMN	ACAD		ADMN	ACAD		ADMN	ACAD	
( )	( )	PRESIDENT/CHANCELLOR	( )	( )	EXECUTIVE VP	( )	( )	ADMINISTRATIVE VP
( )	( )	CHIEF ACAD. OFFICER	( )	( )	CHIEF BUSINESS OFFICER	( )	( )	COMPUTING VP/VICE CHANCELLOR
( )	( )	OTHER						

Specify: _____

ADMINISTRATIVE AND ACADEMIC COMPUTING ARE:

( ) SEPARATE ( ) COMBINED ( ) FACILITY MANAGEMENT BY: _____

ADMINISTRATIVE/ACADEMIC COSTS ARE BILLED:

ADMN	ACAD		ADMN	ACAD		ADMN	ACAD	
( )	( )	FULLY	( )	( )	PARTIALLY	( )	( )	NOT BILLED

INFORMATION CENTER: ( ) Yes ( ) No

AIS Staffing and Budget Section

COMBINED computing installations should estimate the percentages that can be attributed to the AIS function.
SEPARATE administrative installations should enter 100% for all staff and budget percentages.

STAFF	FTE	% ON ADMIN IF COMBINED	BUDGET	ANNUAL DOLLARS	% ON ADMIN IF COMBINED
MANAGEMENT:		%	STAFF:		%
PROGRAMMERS & ANALYSTS:		%	HARDWARE:		%
SYSTEMS PROGRAMMERS:		%	SOFTWARE:		%
OPERATIONS:		%	COMMUNICATIONS:		%
CLERICAL:		%	OTHER:		%
TOTAL STAFF:	AVG %		TOTAL BUDGET:	AVG %	

AIS Hardware and Software Section

Please enter the name of the appropriate item, and check the box after it if it was installed in the LAST TWO YEARS.

COMPUTER HARDWARE USED FOR AIS (List microcomputers in next section)

1) [ ] 3) [ ] 5) [ ]

2) [ ] 4) [ ] 6) [ ]

MICROCOMPUTERS (List the types you have, followed by the quantity, if more than one.)

1) [ ] 3) [ ] 5) [ ]

2) [ ] 4) [ ] 6) [ ]

PROPRIETARY APPLICATION-SPECIFIC SOFTWARE (e.g. IAI Student Records System)

1) [ ] 3) [ ] 5) [ ]

2) [ ] 4) [ ] 6) [ ]

DATABASE MANAGEMENT SYSTEMS USED FOR AIS (e.g. IMS, TOTAL)

1) [ ] 2) [ ] 3) [ ]

PROPRIETARY APPLICATION SUPPORT SOFTWARE (e.g., CICS, DATATRIEVE, FOCUS, RAMIS, IDEAL)

1) [ ] 3) [ ] 5) [ ]

2) [ ] 4) [ ] 6) [ ]

COMMUNICATIONS

NUMBER OF INTERACTIVE DEVICES: _____ ELECTRONIC MAIL SYSTEM: ( ) Yes ( ) No

INTERNAL NETWORKING: 1) _____ 2) _____ 3) _____

EXTERNAL NETWORKING: 1) _____ 2) _____ 3) _____

Applications Section

Check O/L (online) if any portion of an application is run in an interactive mode; DDP (distributed DP) for those that use a computer other than the central one; MICRO for applications using an independent microcomputer; PROP (proprietary) for purchased packages. Check the NEW column if the application was installed in the LAST TWO YEARS. Please mark all applications that are in production at your campus.

FINANCIAL MANAGEMENT	BATCH	O/L	DDP	MICRO	PROP	NEW?
GENERAL FUND LEDGER	( )	( )	( )	( )	( )	[ ]
GENERAL FUND EXPENDITURES	( )	( )	( )	( )	( )	[ ]
DEPARTMENTAL EXPENDITURES	( )	( )	( )	( )	( )	[ ]
GENERAL ACCOUNTS RECEIVABLE	( )	( )	( )	( )	( )	[ ]
STUDENT ACCOUNTS RECEIVABLE	( )	( )	( )	( )	( )	[ ]
ACCOUNTS PAYABLE	( )	( )	( )	( )	( )	[ ]
PAYROLL	( )	( )	( )	( )	( )	[ ]
EMPLOYEE BENEFIT ACCOUNTING	( )	( )	( )	( )	( )	[ ]
RETIREMENT SYSTEM ACCOUNTING	( )	( )	( )	( )	( )	[ ]
BANK ACCOUNT RECONCILIATION	( )	( )	( )	( )	( )	[ ]
CASH FLOW ANAL/PROJECTION	( )	( )	( )	( )	( )	[ ]
INVESTMENT RECORDS	( )	( )	( )	( )	( )	[ ]
INVESTMENT EVALUATION	( )	( )	( )	( )	( )	[ ]
GRANT & CONTRACT ADMIN	( )	( )	( )	( )	( )	[ ]
RESEARCH PROJECT ACCOUNTING	( )	( )	( )	( )	( )	[ ]
RESEARCH PROPOSAL MONITORING	( )	( )	( )	( )	( )	[ ]
FINANCIAL AID ACCOUNTING	( )	( )	( )	( )	( )	[ ]
TUITION & FEES ACCOUNTING	( )	( )	( )	( )	( )	[ ]
RESIDENCE HALL ACCOUNTING	( )	( )	( )	( )	( )	[ ]
STORES ACCOUNTING	( )	( )	( )	( )	( )	[ ]
TELEPHONE ACCOUNTING	( )	( )	( )	( )	( )	[ ]
TRAVEL ACCOUNTING	( )	( )	( )	( )	( )	[ ]

COMPUTING INSTALLATION MANAGEMENT	BATCH	O/L	DDP	MICRO	PROP	NEW?
HARDWARE INVENTORY/ACCOUNTNG	( )	( )	( )	( )	( )	[ ]
CHARGEBACK SYSTEM	( )	( )	( )	( )	( )	[ ]
HARDWARE PERFORMANCE MONITOR	( )	( )	( )	( )	( )	[ ]
STORAGE MEDIA MANAGEMENT	( )	( )	( )	( )	( )	[ ]
FORMS INVENTORY	( )	( )	( )	( )	( )	[ ]
PROJECT MANAGEMENT	( )	( )	( )	( )	( )	[ ]

LOGISTICS & RELATED SERVICES	BATCH	O/L	DDP	MICRO	PROP	NEW?
PURCHASE ORDER FOLLOW-UP	( )	( )	( )	( )	( )	[ ]
PURCHASING INFO SYSTEM	( )	( )	( )	( )	( )	[ ]
VENDOR INFORMATION SYSTEM	( )	( )	( )	( )	( )	[ ]
STORES INVENTORY	( )	( )	( )	( )	( )	[ ]
OFFICE MACH REPAIR CONTROL	( )	( )	( )	( )	( )	[ ]
AUTOMOBILE REGISTRATION	( )	( )	( )	( )	( )	[ ]
PARKING LOT SPACE ASSIGNMENT	( )	( )	( )	( )	( )	[ ]
TRAFFIC VIOLATION RECORDS	( )	( )	( )	( )	( )	[ ]
CRIME REPORTING	( )	( )	( )	( )	( )	[ ]
CAR POOL MATCHING	( )	( )	( )	( )	( )	[ ]
MOTOR POOL RECORDS	( )	( )	( )	( )	( )	[ ]
EQUIPMENT INVENTORY	( )	( )	( )	( )	( )	[ ]

ADMISSIONS & RECORDS	BATCH	O/L	DDP	MICRO	PROP	NEW?
UNDERGRAD ADMISSIONS PROCESS	( )	( )	( )	( )	( )	[ ]
GRADUATE ADMISSIONS PROCESS	( )	( )	( )	( )	( )	[ ]
HIGH SCHOOL TESTING RECORDS	( )	( )	( )	( )	( )	[ ]
COURSE CATALOG RECORDS	( )	( )	( )	( )	( )	[ ]
SCHEDULE OF CLASSES PREP	( )	( )	( )	( )	( )	[ ]
STUDENT CLASS SCHEDULING	( )	( )	( )	( )	( )	[ ]
TUITION & FEES ASSESSMENT	( )	( )	( )	( )	( )	[ ]
STUDENT REGISTRATION PROCESS	( )	( )	( )	( )	( )	[ ]
CLASS ROSTERS	( )	( )	( )	( )	( )	[ ]
TERM STUDENT RECDS & REPORTS	( )	( )	( )	( )	( )	[ ]
COURSE ADD & DROP PROCESSING	( )	( )	( )	( )	( )	[ ]
ENROLLMENT REPORTING	( )	( )	( )	( )	( )	[ ]
ENROLLMENT STATISTICS	( )	( )	( )	( )	( )	[ ]
STUDENT ETHNIC GROUP RPTING	( )	( )	( )	( )	( )	[ ]
TERM GRADE REPORTING	( )	( )	( )	( )	( )	[ ]
HONORS PROGRAM RECORDS	( )	( )	( )	( )	( )	[ ]
STUDENT TRANSCRIPT RECORDS	( )	( )	( )	( )	( )	[ ]
DEGREE REQ'MENTS EVALUATION	( )	( )	( )	( )	( )	[ ]
CORRSPONDENCE COURSE RECORDS	( )	( )	( )	( )	( )	[ ]
ACADEMIC ADVISEMENT RECORDS	( )	( )	( )	( )	( )	[ ]
CAREER PLANNING	( )	( )	( )	( )	( )	[ ]
STUDENT RECRUITMENT	( )	( )	( )	( )	( )	[ ]
CONTINUING EDUCATION UNITS	( )	( )	( )	( )	( )	[ ]
GRADE DISTRIBUTIONS	( )	( )	( )	( )	( )	[ ]
CLASSROOM ASSIGNMENT	( )	( )	( )	( )	( )	[ ]
VETERANS REPORTING	( )	( )	( )	( )	( )	[ ]
FOREIGN STUDENT REPORTING	( )	( )	( )	( )	( )	[ ]
FINAL EXAM SCHEDULING	( )	( )	( )	( )	( )	[ ]

FACULTY/STAFF/STUDENT SERVCS	BATCH	O/L	DDP	MICRO	PROP	NEW?
FACULTY/STAFF DIRECTORY PREP	( )	( )	( )	( )	( )	[ ]
STUDENT DIRECTORY PREP	( )	( )	( )	( )	( )	[ ]
STUDENT HOUSING REPORTS	( )	( )	( )	( )	( )	[ ]
TEACHER & JOB PLACEMENT	( )	( )	( )	( )	( )	[ ]
STUDENT COUNSELING RECORDS	( )	( )	( )	( )	( )	[ ]
FRATERNITY/SORORITY RUSH	( )	( )	( )	( )	( )	[ ]
STAFF ETHNIC GROUP REPORTING	( )	( )	( )	( )	( )	[ ]
STUDENT PSYCHOLOGICAL TESTS	( )	( )	( )	( )	( )	[ ]
INSTRUCTOR EVALUATION	( )	( )	( )	( )	( )	[ ]
FINANCIAL AID EVALUATION	( )	( )	( )	( )	( )	[ ]
FINANCIAL AID AWARDS	( )	( )	( )	( )	( )	[ ]
STUDENT EMPLOYMENT RECORDS	( )	( )	( )	( )	( )	[ ]
WORK STUDY RECORDS	( )	( )	( )	( )	( )	[ ]
_____	( )	( )	( )	( )	( )	[ ]
_____	( )	( )	( )	( )	( )	[ ]

PLANNING MGMT & INSTN RSRCH	BATCH	O/L	DDP	MICRO	PROP	NEW?
BUDGET FORECASTING	( )	( )	( )	( )	( )	[ ]
BUDGET PREPARATION	( )	( )	( )	( )	( )	[ ]
BUDGET ANALYSIS	( )	( )	( )	( )	( )	[ ]
BUDGET POSITION CONTROL	( )	( )	( )	( )	( )	[ ]
INSTITUTIONAL COST STUDIES	( )	( )	( )	( )	( )	[ ]
FACULTY SALARY ANALYSIS	( )	( )	( )	( )	( )	[ ]
SUPPT STAFF SALARY ANALYSIS	( )	( )	( )	( )	( )	[ ]
FACULTY ACTIVITY ANALYSIS	( )	( )	( )	( )	( )	[ ]
SUPPT STAFF ACTIVTY ANALYSIS	( )	( )	( )	( )	( )	[ ]
RESOURCE REQ'MENTS MODELING	( )	( )	( )	( )	( )	[ ]
STUDENT FLOW MODELING	( )	( )	( )	( )	( )	[ ]
FINANCIAL MODELING	( )	( )	( )	( )	( )	[ ]
LONG RANGE PLANNING	( )	( )	( )	( )	( )	[ ]
ENROLLMENT FORECASTING	( )	( )	( )	( )	( )	[ ]
HEGIS REPORTING	( )	( )	( )	( )	( )	[ ]
DATA ELEMENT DICTIONARY	( )	( )	( )	( )	( )	[ ]
INSTITUTIONAL CODE CONTROL	( )	( )	( )	( )	( )	[ ]
ICLM/CROSS-OVER STUDIES	( )	( )	( )	( )	( )	[ ]
PROJECT MANAGEMENT SYSTEM	( )	( )	( )	( )	( )	[ ]

HOSPITAL APPLICATIONS	BATCH	O/L	DDP	MICRO	PROP	NEW?
PATIENT REGIST/ADMISSION	( )	( )	( )	( )	( )	[ ]
HOSPITAL CENSUS	( )	( )	( )	( )	( )	[ ]
MEDICAL RECORDS	( )	( )	( )	( )	( )	[ ]
APPOINTMENTS & SCHEDULING	( )	( )	( )	( )	( )	[ ]
CENTRAL SUPPLY INVENTORY	( )	( )	( )	( )	( )	[ ]
COMMUNICATIONS & ORDER ENTRY	( )	( )	( )	( )	( )	[ ]
DIETARY FOOD SERVICE	( )	( )	( )	( )	( )	[ ]
HOUSEKEEPING	( )	( )	( )	( )	( )	[ ]
LABORATORY INFO SYSTEM	( )	( )	( )	( )	( )	[ ]
RADIOLOGY INFORMATION SYSTEM	( )	( )	( )	( )	( )	[ ]
PHARMACY INFORMATION SYSTEM	( )	( )	( )	( )	( )	[ ]
NURSING STATION SUPPORT SYS	( )	( )	( )	( )	( )	[ ]
PHYSICIAN SUPPORT SYSTEM	( )	( )	( )	( )	( )	[ ]
PATIENT BILLING/ACCTS RECEIV	( )	( )	( )	( )	( )	[ ]
HOSPITAL FINANCIAL INFO SYS	( )	( )	( )	( )	( )	[ ]
BLOODBANK RECORDS	( )	( )	( )	( )	( )	[ ]
_____	( )	( )	( )	( )	( )	[ ]
_____	( )	( )	( )	( )	( )	[ ]
_____	( )	( )	( )	( )	( )	[ ]

LIBRARY APPLICATIONS	BATCH	O/L	DDP	MICRO	PROP	NEW?
ACQUISITIONS	( )	( )	( )	( )	( )	[ ]
CATALOGING	( )	( )	( )	( )	( )	[ ]
CARD & MAT'L PREP & CONTROL	( )	( )	( )	( )	( )	[ ]
CIRCULATION CONTROL	( )	( )	( )	( )	( )	[ ]
SERIALS HOLDINGS	( )	( )	( )	( )	( )	[ ]
BIBLIO. SEARCH SERVICE	( )	( )	( )	( )	( )	[ ]
FUGITIVE MATERIAL INDEXING	( )	( )	( )	( )	( )	[ ]
EDUCATIONAL MEDIA SERVICES	( )	( )	( )	( )	( )	[ ]

PHYSICAL PLANT OPERATIONS	BATCH	O/L	DDP	MICRO	PROP	NEW?
PHYSICAL PLANT ACCOUNTING	( )	( )	( )	( )	( )	[ ]
PHYSICAL PLANT JOB SCHEDULE	( )	( )	( )	( )	( )	[ ]
BUILDING MAINTENANCE COSTS	( )	( )	( )	( )	( )	[ ]
EQUIPMENT PREVENTIVE MAINT	( )	( )	( )	( )	( )	[ ]
KEY INVENTORY	( )	( )	( )	( )	( )	[ ]
BUILDING ACCESS CONTROL	( )	( )	( )	( )	( )	[ ]
ENERGY MONITORING SYSTEM	( )	( )	( )	( )	( )	[ ]
_____	( )	( )	( )	( )	( )	[ ]

GENERAL ADMIN SERVICES	BATCH	O/L	DDP	MICRO	PROP	NEW?
FACILITIES INVENTORY (SPACE)	( )	( )	( )	( )	( )	[ ]
FACILITIES UTIL. ANALYSIS	( )	( )	( )	( )	( )	[ ]
CLASSROOM UTIL. ANALYSIS	( )	( )	( )	( )	( )	[ ]
PERSONNEL RECORDS	( )	( )	( )	( )	( )	[ ]
PERSONNEL EVALUATION	( )	( )	( )	( )	( )	[ ]
PERSONNEL PLACEMENT	( )	( )	( )	( )	( )	[ ]
FEDERAL COMPLIANCE REPORTING	( )	( )	( )	( )	( )	[ ]
CIVIL SERVICE POSITION RECDS	( )	( )	( )	( )	( )	[ ]
SKILLS/INTEREST INVENTORY	( )	( )	( )	( )	( )	[ ]
ALUMNI RECORDS	( )	( )	( )	( )	( )	[ ]
FOUNDATION & GIFT RECORDS	( )	( )	( )	( )	( )	[ ]
CURRICULUM PLANNING	( )	( )	( )	( )	( )	[ ]
TEST SCORING & ANALYSIS	( )	( )	( )	( )	( )	[ ]

AUXILIARY SERVICES	BATCH	O/L	DDP	MICRO	PROP	NEW?
RESIDENCE HALL BILLING	( )	( )	( )	( )	( )	[ ]
FACULTY CLUB BILLING	( )	( )	( )	( )	( )	[ ]
FOOD SRVC MENU & INVENTORY	( )	( )	( )	( )	( )	[ ]
BOOKSTORE INV & OPERATIONS	( )	( )	( )	( )	( )	[ ]
EVENTS CALENDAR & PREP	( )	( )	( )	( )	( )	[ ]
ROOM RESERVATIONS	( )	( )	( )	( )	( )	[ ]
AUDIO/VISUAL BOOKING/BILLING	( )	( )	( )	( )	( )	[ ]
COLLEGE/UNIVERSITY PRESS	( )	( )	( )	( )	( )	[ ]
GENERAL MAILING LIST SYSTEM	( )	( )	( )	( )	( )	[ ]
COMPUTER BILLING SYSTEM	( )	( )	( )	( )	( )	[ ]
HEALTH SERVICE SYSTEM	( )	( )	( )	( )	( )	[ ]
ATHLETIC EVENT TICKET SYSTEM	( )	( )	( )	( )	( )	[ ]
SPORTS INFORMATION SYSTEM	( )	( )	( )	( )	( )	[ ]

INTEGRATED APPLICATIONS	BATCH	O/L	DDP	MICRO	PROP	NEW?
_____	( )	( )	( )	( )	( )	[ ]
_____	( )	( )	( )	( )	( )	[ ]

	BATCH	O/L	DDP	MICRO	PROP	NEW?
_____	( )	( )	( )	( )	( )	[ ]
_____	( )	( )	( )	( )	( )	[ ]